B.C. SOIL INFORMATION SYSTEM
VOLUME II

Data Entry Procedures for Ecosystem Description Forms

DATA MANAGEMENT SERIES

DATA ENTRY PROCEDURES FOR ECOSYSTEM DESCRIPTION FORMS

(BCSIS — Volume 2)

by
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Overview of the British Columbia Soil Information System (BCSIS)

BCSIS is a computer based soil information system incorporating site, morphological, and laboratory data. The main objectives of the system are: to increase accessibility and reliability of soils information; to increase accuracy, volume, speed of response, and sophistication of interpretations; to increase speed of legend development; to increase ability to integrate soils data with other resource data. The system includes a number of easy to use functions related to data control, data management, and report generation. For data analysis, BCSIS is designed to be used in conjunction with the commercially available Statistical Analysis System (SAS). BCSIS resides on the Victoria mainframe computer but is accessible as well in other cities through the DATAPAC and SNA communications networks.

An extension of BCSIS is the Soil Laboratory System (SLS). SLS is an interactive, PDP 11/24 based minicomputer system designed to capture physical and chemical soils data determined in the soils laboratory in Kelowna. The main objectives of the system are: to increase the volume of samples which the lab can process, by eliminating or reducing the need to maintain lab notebooks and paper administrative records; to allow quick and accurate entry of the data into BCSIS files, by providing for the transference of final results to the mainframe in Victoria over the DATAPAC network. Raw data are entered into a number of video terminals located in the lab. Virtually all calculated results are performed automatically by the computer, provided that the raw data required by the calculations have already been entered. Reports on the laboratory analyses are printed and sent to the soil scientist requesting the analyses. The data may also be accessed and manipulated through BCSIS and SAS.

This document is one of a series describing BCSIS. These documents are written primarily for the professional soil scientist or ecologist, as opposed to the computer specialist. The titles within the series are as follows:

User Manual for the British Columbia Soil Information System (BCSIS Vol. 1).
Data Entry Procedures for Ecosystem Description Forms (BCSIS Vol. 2).
Data Entry Procedures for Soil Laboratory Forms (BCSIS Vol. 3).
British Columbia Soil Information System Validation Procedures (BCSIS Vol. 4).
Manipulation of Soils Data Using the British Columbia Soil Information System (BCSIS Vol. 5).

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Mark Sondheim

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Purpose

The purpose of this document is to give concise, detailed information as to how the site, soil and vegetation description forms are to be completed. This degree of standardization is required in order to simplify the data entry and edit procedures. Forms will be entered directly by professional key entry personnel who will not have any particular knowledge of this type of data. Note that the data forms have been altered slightly from those displayed in the first printing of Describing Ecosystems in the Field[1]. The Site and Soil information contained in this report constitutes Volume 2 of the British Columbia Soil Information System documentation.

How To Use The Procedures

First read the glossary and the general comments which follow. Next examine the specific instructions for the site, soil, and vegetation forms. All data entry instructions are referenced by the item numbers as they appear on the site and soil forms, and code symbols for the vegetation form. The field length, the field description, and comments about special characters or formats are provided where applicable. The possible entries are generally listed. The appendices provide a list of codes and the terms represented by them. Detailed definitions of the terms are provided in Describing Ecosystems in the Field. Any comments in the first printing of that document concerning data entry procedures are superseded by those given here.

Recommendations Concerning Data Collection

For those surveyors who are interested in doing any numerical or statistical analysis on their data, there are two points which should be noted:

1. Be consistent in your data collection. If you are interested in examining the gravel content across the survey area, then make sure that you always estimate gravel content, or at least that you estimate it for a sufficiently large number of plots to make analysis worthwhile. Also, make sure that you will be able to compare comparable things! A comparison of % gravel of a surface horizon at one site to % gravel of a deep horizon at another site is likely to be meaningless. It would be better to either specify a fixed depth interval used everywhere, or to always use the

[1] Walmsley et al. (ed.) 1980. Describing ecosystems in the field. R/B Tech. Pap. 2, Land Management Rep. No. 7. Ministries of Environment and Forests, Victoria, B.C. 224 p.

parent material (C horizon). Thus, you could specify a D1 horizon from 0 to 20 cm at every site. For D1 you might collect CSSC texture and % gravel data only. Later you would have a good basis for examining the distribution of these properties across the survey area. You could also collect normal horizon data. It would be perfectly legitimate to have the following horizon sequence: Ah(0-4), Ahe(4-10), Bf(10-37), BC(37-52), C(52-105), D1(0-20), D2(80-100). (If you have taken a composite sample for lab analysis from the Ah and Ahe horizons, you would then enter as well a D3(0-10) horizon. See the discussion under Level in the Soil section of this report.)

2. Use an experimental design whenever possible. Before you begin your survey, you should carefully consider what types of comparisons or tests you will later want to make. You may in fact find it useful to discuss in detail your plans with someone familiar with statistical analysis. If any experimental design codes are required beyond those implied by the normal data on the forms, they can be entered into a free format field on the site form. For example, say you choose to sample on a grid basis, with the X coordinate ranging from 01 to 20 and the Y coordinate ranging from 01 to 20. You could use the first two spaces under Plot No. on the Site Form for the X coordinate and the next two spaces for the Y coordinate. Later, using BCSIS, you could place Plot No., with any other data to be examined, into a Statistical Analysis System (SAS) data base. It would then be easy to define two new variables, X and Y, based on the values for Plot No.

3. Indicate the sampling technique used in the survey. Item 53 on the Site Description Form is to be used for this purpose. This may by of major importance to someone else using your data, depending upon the type of analysis or interpretation which they are employing.

GLOSSARY

Field

The space allocated for a given item on a data form, on a computer transaction, or in a computer file.

Field Length

The maximum number of characters which may be entered for a given item. There are two general modes which may be used, as shown by example here:

4 - a field length of 4, with no reference as to the type of characters which it may contain.

5,2 - a field length of 5, with the implication that the first three characters precede the decimal point and that the last two characters follow the decimal point. All five characters are assumed to be numeric. Thus, the number 1 2 3 . 1 2 has a field length of 5,2.

Type

A reference to one of the following three categories of data:

N - numeric characters. These are the ten digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. Decimal points are not included. Blanks may be included if they are leading, as indicated by the following example. _ 1 0 and 0 1 0 are equivalent. (The entry _ 1 _ is not allowed). Zeroes instead of blanks should follow a decimal. (A depth of 10 cm should be entered as _ 1 0 . 0). Items 4 and 6 of the site form provide the only apparent exception to these rules.

A - alphabetic characters. These are the twenty-six letters of the alphabet plus the blank character.

AN - alphanumeric characters. These include all numeric and all alphabetic characters only.

C - all possible characters. These include numeric characters, alphabetic characters, and special characters. Special characters which may be used are: *#$@:;,.?!'"()+-=<>. A slash (/) must not be used in items 1, 2, 8, 14, 15, and 47 on the Site Description Form; it may be used anywhere else where character data are allowed.

Format

A reference to one of the following two categories of data storage:

X - fixed - the position of each character of the data element is directly connotative. All numeric entries for example are fixed. Fixed format data can be readily used in sorting or analytic procedures. Specific edit procedures can usually be established for fixed format data.

E - free - the position of each character of the data element is not connotative. All 'comments' or 'notes' entries are free. Free format data may appear in a report or description of a site but often cannot be easily used in sorting or analytic procedures. Specific edit procedures usually cannot be established for free format data.

Exception - a certain number of the leading characters of a free format entry may be considered as fixed if special arrangements are made with the systems analyst in the Terrestrial Studies Branch. Thus, with certain modifications, agricultural capability ratings for example may be entered as fixed format data in what normally would be a 'comments' or 'notes' item.

Justification

A reference to one of the following two forms of data entry.

L - left justified. The data is entered in the left-hand most part of the field. If for example the field length is 6 and the letters to be entered are ACK, then left justification would appear as follows: A C K _ _ _. Normally, alphabetic characters are left justified.

R - right justified. The data is entered in the right-hand most part of the field. Right justification would appear as follows: _ _ _ 1 1 5. Normally, numeric characters are right justified.

- Fields which assume a decimal are always right justified for the integer part of the number. The fractional part of the number should always be completed; thus, a slope of five percent would be entered as _ _ 5.0 under item 10 on the site form.

Field Description

Specification of type, format, and justification, as shown by the following example. A-X-L indicates alphabetic character data of a fixed format and left justified. Numeric fixed entries with decimals are right justified and filled with zeros on the right, as discussed above; thus, a justification code is not given for them in the tables which follow.

GENERAL COMMENTS

Series and Form Number

Each soil and vegetation form must have the form number entered corresponding to the associated site form. Pages stapled together may be separated by key entry personnel. The form number must be right justified.

Decimal Points

On both the site and soil forms for all fixed format entries, decimal points are supplied wherever allowed. On the vegetation form a decimal has been provided for stratum height in metres. However, for percent cover, values may range from 99 to 01 to .1; that is, to enter values less than 01 percent, the surveyor may use a decimal point.

Special Symbols

Special symbols (/ # $. etc.) are not allowed in any numeric, alphabetic or alphanumeric fields. Consequently, entries such as <25 or >50 are not permitted as indicators of depth. This is discussed under the appropriate items on both forms.

Letters

The computer system stores all alphabetic characters as upper case. You may use lower case letters if you wish, but they will not be entered as such. As discussed below, please print clearly and please use the proper form of the letters i, l, and o, in particular.

X

On certain items (as discussed in the instructions) an X may be entered to indicate that an item has been looked for but not found. For numeric fields the X is placed in the right-hand most space. For other types of fields the X is placed in the left-hand most space. On the site form the only place where this is pertinent are number 35, a through g, and number 38, the first entry. On the soil form the only items where an X may be entered are under item numbers 12, 13, 18, 19, 20, 21, 22, and 23. Note that all of these locations are shaded. If there is neither an X nor an entry for any of these items, it is assumed that the presence or value of the item has not been determined. This use of X is not relevant to the vegetation form.

Circled Items

It is recommended that circled items on the site description form be completed. If any are not completed, the computer will accept the form and produce a message indicating which circled items have been ignored.

Print Style

Printing is mandatory on all entries on all forms; it must be neat and legible. The letter O should always have a slash through it, whereas the number zero does not. The letter I should always have bars on both the top and bottom (or if lower case, it should be clearly dotted). The letter L should always make a right angle (or an elongated loop if lower case). If the form is not legible, the key entry staff will make mistakes, which will come back to you as error messages from the computer.

Transaction Identifiers

The small characters on the left hand side of the Site and Soil Forms, such as /ADDS00, /ADDS01, and the like, are known as transaction identifiers. The identifier is key entered along with the series and form number and the appropriate data. The /ADDS01 transaction, for example, contains the identifier in the first six spaces, two blanks in the 7th and 8th spaces, the Series and Form Number in spaces 9 through 15, and the data for site items 1 through 6 (Proj. ID through UTM System) in spaces 16 through 101. Thus, the /ADDS01 identifier tells the system that site data for items 1 through 6 are being added or entered and that it is with reference to the given series and form number.

ADOS00 **SERIES 82 FORM** [ ] **SITE DESCRIPTION FORM** Parameters which must be filled are circled. PAGE ___ OF ___

ADOS01 (1.) Proj. ID. | 2. Plot No. | (3.) Date (Y/M/D) | (4.) NTS Sheet | (5.) Lat. ° ' " | Long. ° ' " | (6.) UTM System | Zone | Easting | Northing

ADOS02 7. Location | 8. Co-ord. Flight line Photo # X Y | (9.) Aspect | (10.) Slope % | (11.) Elevation : metres

ADOS03 12. Terrain Yr. 19 | Texture | Gen. Mat. | Qual. Desc. | Surface Express | Mod. Proc. | Qual. Desc. | 13. Phys. Sub. | 14. Zone/Subzone System BGC V P | 15. Ecological Classification System BGC Assoc. S BGC Type P

ADOS04 16. Vegetative Cover System | 1 g s V | 2 g s V | 3 g s V | 4 g s V

ADOS05 17. Soil Classif. | Yr 19 | Phase | 1 2 3 | Family Particle Size 1 2

ADOS06 18. Plot representing

25. Site position diagram (refer to Series ___ No. ___)

ADOS07

(19.) Site position macro
a. apex
b. face
c. upper slope
d. middle slope
e. lower slope
f. valley floor
g. plain

(20.) Site position meso
a. crest
b. upper slope
c. middle slope
d. lower slope
e. toe
f. depression
g. level

(21.) Site surface shape
a. concave
b. convex
c. straight.

(22.) Microtopography
a. smooth
b. micro mounded
c. slightly mounded
d. moderately mounded
e. strongly mounded
f. severely mounded
g. extremely mounded
h. ultra mounded

23. Meso slope length M

24. Meso up-slope length M

photo roll no. [ ] Direction
photo no. [ ]
scale [ ] 1 = ___

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ENV. 1896

(26) Exposure Type (allow 3) 38
a. not applicable
b. wind
c. insolation
d. frost
e. cold air drainage
f. saltspray
g. atmospheric toxicity

other 42

Comments: 62

27. Ecological Moisture Regime 112
a. very xeric
b. xeric
c. subxeric
d. submesic
e. mesic
f. subhygric
g. hygric
h. subhydric
i. hydric

28. Nutrient Regime 113
a. oligotrophic
b. submesotrophic
c. mesotrophic
d. permesotrophic
e. eutrophic
f. hypereutrophic

29. Soil Temperature Class 114
a. extremely cold
b. very cold
c. cold
d. cool
e. mild

30. Soil Moisture Subclass 115
a. xeric
b. arid
c. subarid
d. semiarid
e. subhumid
f. humid
g. perhumid
h. subaquic
i. aquic
j. per aquic

31. Soil drainage 116
a. rapidly
b. well
c. mod. well
d. imperfectly
e. poorly
f. very poorly

32. Perviousness 117
a. rapidly
b. moderately
c. slowly

33. Free Water 118
a. present
b. absent

34. Flood hazard 119
a. frequent and irregular
b. frequent
c. may be expected
d. rare
e. no hazard

ADOS08

35. Depth to (cm)
a. water table 16
b. rooting (effective)
c. root restricting layer
d. frozen layer
e. bedrock
f. carbonate
g. salinity 45

36. Bedrock type 47
1
2 88

37. Bedrock structure 51
90 124

38. Coarse fragment lithology type (in order of dominance) 123
1 2 3

if mixed (enter '1') 137

ADOS09

39. Successional Status 18
Present Stage: PS, YS, MS, OS, YEC, YCC, MCC, MEC, DC, NV

Expected climax 19

Rate of succession 49
a. very slow
b. slow
c. normal
d. rapid
e. very rapid

40. Factors Influencing Stand Establishment 50
1 56
2 88 124

ADOS10

41. Veg. Plot: Area 16 (ha) Shape # Dimensions X x Y (m)

42. Humus Form Class. 32 Variants

43. Surface Substrate

SUBSTRATE	% COVER
Decaying Wood	46
Bedrock	
Cobbles and Stones	
Mineral Soil	
Organic Matter	
Water	86
Total	100%

44. Profile Status 74
a. modal
b. variant
c. texadjunct
d. undecided

45. Profile Deviation (allow 3) 75
a. none
b. solum thickness
c. colour
d. texture
e. drainage
f. chemical
g. horizon thickness
other: 78

46. Soil Mapping Unit 98
a. series
b. family
c. associate
d. association
e. catena
f. complex
g. land system
h. land type
z. other

ADOS11

47. Soil name 16
48. Associated soil 36
49. Profile No. 60
(50) Project Coordinator 62
Surveyor 82 101
(51) Agency 107
(52) Type of Soil Sample
Chemical 115: a. full b. partial
Physical 116: a. full b. partial

53. Veg. Sampling Tech. 117 124

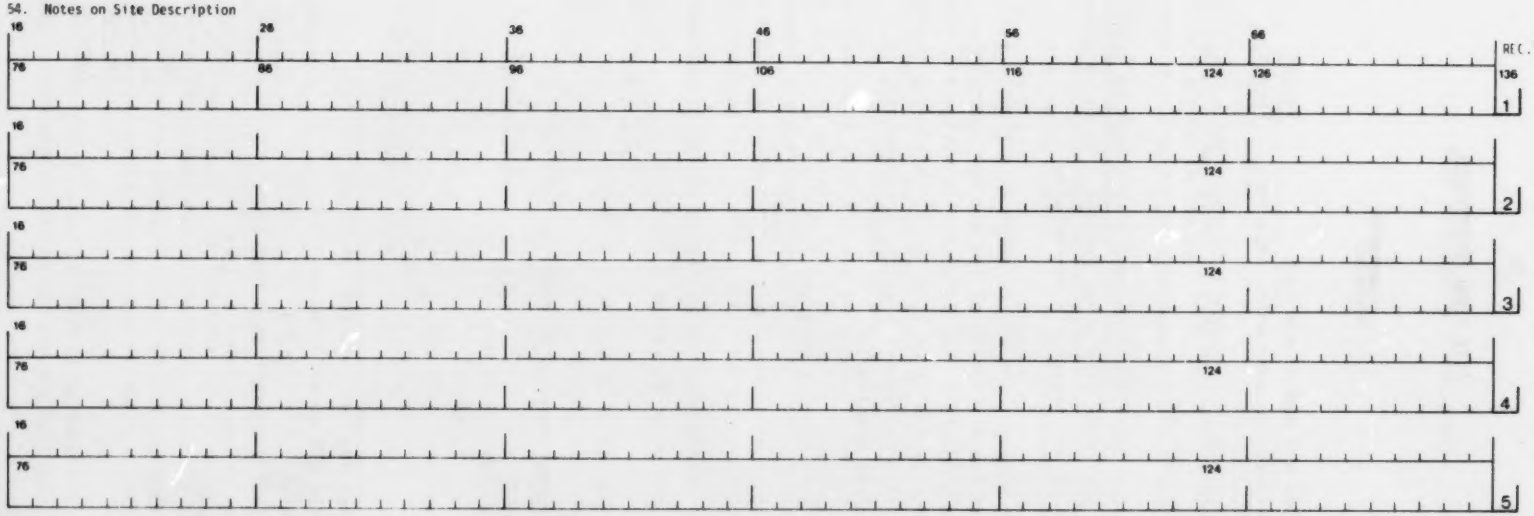
SERIES [8|2] FORM ☐☐☐☐

SITE DESCRIPTION FORM

PAGE ___ OF _____

54. Notes on Site Description

ADDS12



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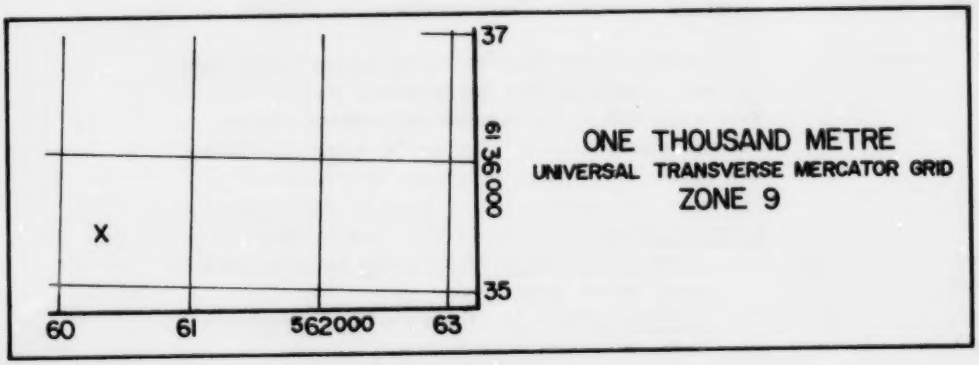
SITE FORM PROCEDURES

Item No.	Description	Comments	Field Length	Field Description
-	Form Number	Series and Number are both provided. No user entry required. Series	2	N-X
		Form No.	5	N-X-R
-	Page - of -	Complete this item only if it is useful to you in a manual context.		
1	Proj. I.D.	Project identification code - this must be identical for all forms of a given project. It is recommended that it not exceed six characters.	25	C-E-L
2	Plot No.	Plot Number - the way in which this item is filled is at the discretion of the project coordinator. In some projects it may be useful to assign the first character the value 1, 2, or 3, indicating whether the form represents a quick, intermediate, or detailed examination.	15	C-E-L
3	Date	The date must be entered: year	2	N-X-R
		month	2	N-X-R
		day	2	N-X-R
4	NTS Sheet	User should make use of the following guidelines:	8	AN-X
		NTS series or BC series - 1:125 000 92F | NW | _		
		NTS series or BC series - 1:50 000 92F/4E 92F | 4E | _		
		BC forest service 20 chain or 1:20 000 92F/4-e 92F | 4 | E		
		BC series - 1:20 000 92F.057 92F | 057 | _		
		BC series - 1:10 000 92F.057.2 92F | 057 | 2		
5	Lat., Long.	Either the latitude and longitude or the UTM coordinates must be entered. The computer will automatically convert such that both types of coordinates will be stored.		
		Latitude		
		Degrees	2	N-X
		Minutes	2	N-X-R
		Seconds	2	N-X-R
		Accuracy	2	N-X-R
		Longitude		
		Degrees	3	N-X
		Minutes	2	N-X-R
		Seconds	2	N-X-R
		Accuracy	2	N-X-R

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
6	UTM	Zone - a number ranging from __8 to 11 in B.C. Easting - a left justified number up to 6 digits in length. Northing - a left justified number up to 7 digits in length. Example: The statue of Capt. Vancouver on the Parliament Buildings in Victoria: to the nearest metre: Zone 10, Easting 472703, Northing 5362806 to the nearest km: Zone 10, Easting 473___, Northing 5363___ The blue grid found on many maps is the UTM system. Look at the blue numbers in any of the corners of the map. The full six and seven digit numbers for Eastings and Northings will be given. The blue numbers along the map boundaries are not complete in that they are missing the first one or two digits. For example:	Zone Easting Northing	2 6 7	N-X-R N-X-L N-X-L



The location of the X could be given as: Zone 9 Easting 560300 Northing 6135400 Do not confuse the UTM system with the military grid reference system; the grid is the same for both, but the referencing is somewhat different. Also note that this is the only example on any of the forms where a fixed numeric entry is left justified.

7	Location	Enter free-format comments related to location of site. A maximum of 78 characters may be used.	78	C-E-L

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
8	Photo # info.	Flight Line: as indicated on the aerial photograph. It consists of two or more alphabetic characters followed by several numeric characters. It should be entered as left justified.	7	AN-E-L
		Photo No.: a three character number as indicated on the aerial photograph.	3	N-X-R
		X Coordinate: the horizontal coordinate of the site location on the photograph as determined by overlaying the plastic grid.	3,1	N-X
		Y Coordinate: the vertical coordinate of the site location.	3,1	N-X
9	Aspect	A number ranging from __0 to 359. On level ground, or where the slope is so slight that aspect cannot be measured, enter 999.	3	N-X-R
10	Slope	Slopes as measured in percent. The space after the decimal is typically filled with a zero.	4,1	N-X
11	Elevation	Elevation in metres, right justified.	4	N-X-R
		Accuracy in metres, right justified.	3	N-X-R
12	Terrain	The Terrain Classification System as currently used by the Terrestrial Studies Branch.		
		Year e.g. 1978. The year of publication of the terrain classification. Appendix A (p. 38) lists all possible codes.	2	N-X
		First Stratigraphic Unit (first line of box).		
		Terrain Texture 1: if only one textural term is used, enter here.	1	A-X
		Terrain Texture 2: if two textural terms are used, enter second one here.	1	A-X
		Genetic Material: Only one character may be entered.	1	A-X
		Qualifying Descriptor 1: if only one term is used, enter here.	1	A-X
		Qualifying Descriptor 2: if two terms are used, enter second one here.	1	A-X
		Surface Exression 1: if only one term is used, enter here.	1	A-X
		Surface Expression 2: if two terms are used, enter second one here.	1	A-X
		Surface Expression 3: if three terms are used, enter third one here.	1	A-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
		Second Stratigraphic Unit (second line of box).		
		- descriptions as per first stratigraphic unit.		
		Terrain Texture 1	1	A-X
		Terrain Texture 2	1	A-X
		Genetic Material	1	A-X
		Qualifying Descriptor 1	1	A-X
		Qualifying Descriptor 2	1	A-X
		Surface Expression 1	1	A-X
		Surface Expression 2	1	A-X
		Surface Expression 3	1	A-X
		Third Stratigraphic Unit (third line of box).		
		- descriptions as per first stratigraphic unit.		
		Terrain Texture 1	1	A-X
		Terrain Texture 2	1	A-X
		Genetic Material	1	A-X
		Qualifying Descriptor 1	1	A-X
		Qualifying Descriptor 2	1	A-X
		Surface Expression 1	1	A-X
		Surface Expression 2	1	A-X
		Surface Expression 3	1	A-X
		Modifying Processes.		
		- descriptions as per first stratigraphic unit.		
		Up to three modifying processes may be entered. They do not correspond in a one-to-one fashion to the stratigraphic units.		
		Modifying Process 1: Only one entry in each box is allowed.	1	A-X
		Qualifying Descriptor 1	1	A-X
		Qualifying Descriptor 2	1	A-X
		Modifying Process 2:	1	A-X
		Qualifying Descriptor 1	1	A-X
		Qualifying Descriptor 2	1	A-X
		Modifying Process 3:	1	A-X
		Qualifying Descriptor 1	1	A-X
		Qualifying Descriptor 2	1	A-X
13	Physiographic Subdivision	Numeric code of four digits indicating the physiographic subdivision (according to Holland, 1976) in which the site is located. See Appendix A (p.39) for the codes.	4	N-X
14	Zone/Subzone	System: Usual entries are either MFRS for the Ministry of Forests Research Branch or METS for the Ministry of Environment Terrestrial Studies Branch.	5	AN-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments			Field Length	Field Description
			MFRS	METS		
		Forest Region	ignore	enter	3	A-X-L
		Forest Section	ignore	enter	2	N-X-R
		Zone	right justify	left justify	8	A-X
		Subzone	enter	enter	2	A-X-L
		Variant	enter	ignore	1	N-X
		Phase	enter	ignore	1	A-X
		Examples:				
		System M F R S _ _ _ : _ _ : _ _ _ _ E S S F | G P | 7 D v p				
		System M E T S I W B : _ 2 : S A E S A L F _ | _ _ | _ _ v p				
		BGC indicates items appropriate for the biogeoclimatic system.				
15	Ecol. Classif.	System: The usual entry will be M F R S _. Daubenmire's system of habitat classification may be accommodated under item 16.			5	AN-X-L
		Association	two character numeric code		2	N-X-R
		Subassociation	one character numeric code		1	N-X
		Type	two character numeric code		2	N-X-R
		Phase	one character alpha code		1	A-X
		BGC indicates items appropriate for the biogeoclimatic system.				
16	Veg. Cover	System: If a particular system is used, the abbreviated name should be entered here; for example D A U 6 8 would stand for Daubenmire 1968. Up to four plants may be entered using the abbreviations given in the Vegetation Coding List (April 1980, B.D. Titus) compiled by the Ministry of Forests.			5	AN-X-L
		Genus 1	four character alphabetic code		4	A-X
		Species 1	three character alphabetic code		3	A-X
		Variant 1	one character numeric code		1	N-X
		Genus 2			4	A-X
		Species 2			3	A-X
		Variant 2			1	N-X
		Genus 3			4	A-X
		Species 3			3	A-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
		Variant 3	1	N-X
		Genus 4	4	A-X
		Species 4	3	A-X
		Variant 4	1	N-X
	Veg. Classif.	System	5	AN-E-L
		Class	80	AN-E-L
		These two items do not appear on the field form. They do exist, however, in the computer. They have been included to allow for the identification of vegetation classes which may result from analysis after the field work and which may not be equivalent to items 14, 15, or 16. Their values may be entered directly through BCSIS edit-update procedures (See BCSIS Vol. 1).		
17	Soil	Classification: The Canadian System of Soil Classification codes should be used. These are given in Appendix A (p. 41).		
		Subgroup: right justified before the period.	4	A-X-R
		Great Group: left justified after the period.	3	A-X-L
		Year: The usual entry is 1978.	2	N-X
		Phase: Up to four coded phases or variants may be used. The possible codes include: _1, _2, _3, _4, _5, _6, _7, _8, _9, 10, W1, W2, W3, W4, D1, D2, D3, ØB, ØW, S1, S2, S3, S4, S5, S6, R1, R2, R3, R4, R5, R6, PT, as well as A_, CØ, DC, G_, ID, L_, LØ, MC, MD, PD, R_, S_, SL, SØ, SP, T_, VG, VS, W_, WC. In addition up to three uncoded, free format phases or variants may be entered. See Appendix A (p. 46-47).		
		Coded Phase 1	2	AN-X
		Coded Phase 2	2	AN-X
		Coded Phase 3	2	AN-X
		Coded Phase 4	2	AN-X
		Uncoded Phase 1	20	C-E-L
		Uncoded Phase 2	20	C-E-L
		Uncoded Phase 3	20	C-E-L
		Family Particle Size: up to two entries are allowed. Two entries are applicable where strongly contrasting stratigraphic units occur. Possible (left justified) entries are F, SS, LS, CS, S, L, CL, FL, CSI, FSI, C, FC, VFC, CI, A, T, AS, TS, G, (p. 48).		
		Stratigraphic Unit 1	3	A-X-L
		Stratigraphic Unit 2	3	A-X-L

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
18	Plot Representing	Usually free format information useful primarily on a project basis.	150	C-E-L
19	Site position macro	Circle one only, a through g.	1	A-X
20	Site position meso	Circle one only, a through g.	1	A-X
21	Site surface shape	Circle one only, a through c.	1	A-X
22	Microtopography	Circle one only, a through h.	1	A-X
23	Meso slope length	In metres, right justified.	4	N-X-R
24	Meso up-slope length	In metres, right justified.	4	N-X-R
25	Site position diagram	Refer to form Series and Number.		
		Series and	2	N-X
		Number	5	N-X-R
		Photo Roll No: Number up to two characters long.	2	N-X-R
		Photo No: As Above	2	N-X-R
26	Exposure type	Circle up to three entries, a through g. In addition 'other' and 'comments' may be completed as free format items.		
		Entry 1	1	A-X
		Entry 2	1	A-X
		Entry 3	1	A-X
		Other	20	C-E-L
		Comments	50	C-E-L
27	Ecological Moisture Regime	Circle one entry only, a through i.	1	A-X
28	Nutrient Regime	Circle one entry only, a through f.	1	A-X
29	Soil Temperature Class	Circle one entry only, a through e.	1	A-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field	Field
30	Soil Moisture Subclass	Circle one entry only, a through j.	1	A-X
31	Soil Drainage	Circle one entry only, a through f.	1	A-X
32	Perviousness	Circle one entry only, a through c.	1	A-X
33	Free Water	Circle one entry only, either a or b.	1	A-X
34	Flood Hazard	Circle one entry only, a through e.	1	A-X
35	Depth to (cm)	a. Water Table	5,1	N-X
		b. Rooting (effective)	4,1	N-X
		c. Root Restricting Layer	4,1	N-X
		d. Frozen Layer	5,1	N-X
		e. Bedrock	5,1	N-X
		f. Carbonate	4,1	N-X
		g. Salinity	4,1	N-X
		Indicate the absence of any of the above by placing an X in the right hand most column, just to the right of the decimal.		
36	Bedrock Type	Bedrock 1 - Alpha: One or two alphabetic characters before the colon (:), left justified. Must be entered if Bedrock 1 - Numeric is given. Possible entries are: I _, I A, I I, E _, E A etc. Appendix A (p. 49) contains all possible entries.	2	A-X-L
		Bedrock 1 - Numeric: One or two numeric characters after colon (:), right justified. If specific rock type is not known, item may be left blank. Possible entries are 0 1 through 6 7.	2	N-X-R
		Bedrock 2 - Alpha:) To be used for lower	2	A-X-L
		Bedrock 2 - Numeric:) stratigraphic unit if present.	2	N-X-R
37	Bedrock Structure	Bedrock 1 Structure: Free format entry indicating type of structure, strike, dip angle, direction of dip, and intensity of structure.	35	C-E-L
		Bedrock 2 Structure: As above, for Bedrock 2.	35	C-E-L
38	Coarse Fragment Lithology	Absence: If no coarse fragments (>2 mm) are found in the pedon, then enter an X in character space 125.	1	C-X
		Most Common - Alpha: as in Item 36.	2	A-X-L
		Most Common - Numeric: as in Item 36.	2	N-X-R
		2nd Most Common - Alpha: as in Item 36.	2	A-X-L
		2nd Most Common - Numeric: as in Item 36.	2	N-X-R

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field	Field
		3rd Most Common - Alpha: as in item 36.	2	A-X-L
		3rd Most Common - Numeric: as in item 36.	2	N-X-R
		Mixed: If the lithologies are so mixed that dominance cannot be determined, then enter 1 in box; Coarse Fragment Lithologies may still be entered, if known.	1	A-X
39	Successional Status	Present Stage: Circle one of the following: PS, YS, MS, OS, YEC, YCC, MC, MCC, MEC, DC, NV. These codes are explained in Appendix A (p. 50).		
		Expected Climax: Free format.	30	C-E-L
		Rate of Succession: Circle one only, a through e.	1	A-X
40	Factors Influencing Stand Establishment	Factors: Coded factors include: A, A1, A2, A3, B, B1 through B9, C, C1 through C5, D, D1 through D5, E, E1 through E7, F, F1 through F6, G, G1 through G5, H, H1 through H4. See Appendix A (p. 50) for explanation of codes. Additionally free format factors may be included.		
		Coded Factor 1: letter in first space, number or blank in second space.	2	AN-X-L
		Coded Factor 2: (as above)	2	AN-X-L
		Coded Factor 3: (as above)	2	AN-X-L
		Coded Factor 4: (as above)	2	AN-X-L
		Uncoded Factor 1: upper line.	40	C-E-L
		Uncoded Factor 2: lower line.	40	C-E-L
41	Veg. Plot	Area: Area of plot. If subplots have been used, this number indicates the sum of the subplot areas. If the area is readily determined from the shape and dimension information (i.e., Shape not Irregular), the computer will automatically compute and store the area. This computed value will override any entry for Area.	3,2	N-X
		Shape: The first letter of one of the following words: Circle, Square, Rectangle, Line (no width - some grassland surveys), Irregular. If subplots are used, it is assumed that they are all of equal size and shape; if they are not, then shape should be left blank and Area should be entered.	1	A-X
		Dimensions:		
		Number: Number of subplots. Where there is only one plot, the usual situation, enter: _1.	1	N-X-R
		Dimension 1: The radius or first dimension of the plot. Where subplots are used, it is the radius or first dimension of a subplot.	5,2	N-X
		Dimension 2: The second dimension of the plot.	5,2	N-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
42	Humus Form Classification	Mor Descriptors: in first two spaces of the field. The first letter of one of the following may be used: Hypno, Sphagno, Licheno, Ericaceo, Conifero, Deciduo. The first letter of one of the following may also be included: Granulo, Amorpho, Mycelio, Rhizo.		
		Mor Descriptor 1: If only one descriptor is used, enter in the first space.	1	C-X
		Mor Descriptor 2: If second descriptor is used, enter in the second space.	1	C-X
		Classification: (spaces 34 to 37) One of the following: Mulls - __ | MU, _R | MU, _Z | MU, Moders - __ | MD, ML | MD, _T | MD, _W | MD, Mors __ | MR, _F | MR, HF | MR, FH | MR, _H | MR, _P | MR, HP | MR, MP | MR, FP | MR; Anmoor - __ | AN. See Appendix A for full descriptions of these terms.		
		Subgroup: Right justified in third and fourth spaces.	2	A-X-R
		Great Group: In the fifth and sixth spaces.	2	A-X
		Variants: Up to four variants may be entered. The capitalized letters from the following list indicate possible entries. CLayey, LOamy, SAndy, HYdric, MEsic, XEric, ACid, SLightly acid, CAlcareous, ThicK, ThIN.		
		Variant 1:	2	A-X
		Variant 2:	2	A-X
		Variant 3:	2	A-X
		Variant 4:	2	A-X
		See Appendix A (p. 52) for a complete list of abbreviations.		
43	Surface Substrate	Special symbols such as >, <, and + are not allowed. Note that in the computer check, the sum of the numbers must be between 95 and 110. Also note that a value of zero should be entered as __0.0. Do not use an X here to indicate missing.		
		Decaying Wood:	4,1	N-X
		Bedrock:	4,1	N-X
		Cobbles and Stones:	4,1	N-X
		Mineral Soil:	4,1	N-X
		Organic Matter:	4,1	N-X
		Water:	4,1	N-X
44	Profile Status	Circle one entry only, a through d.	1	A-X

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
45	Profile Deviation	Circle up to three entries, a through g. In addition 'other' may be completed as free format.		
		Entry 1:	1	A-X
		Entry 2:	1	A-X
		Entry 3:	1	A-X
		Other:	20	C-E-L
46	Soil Mapping Unit	Circle one entry only, a through h, or z.	1	A-X
47	Soil Name	The full soils name, without component or phase suffixes, for example: ALBERT . Do not enter AL or AL2X . Items 44 through 46 provide sufficient qualifying information. If there is not an official soils name, you should at least ensure consistency within your project. Note that new official soil names must be at least 6 characters.	20	AN-E-L
48	Associated Soil	The name should be given in full. Component and phase information may be included. Be consistent within your project.	24	AN-E-L
49	Profile No.	A right justified numeric entry to be used when more than one pedon is described for the same soil type.	2	N-X-R
50	Coordinator/ Surveyor	Project-Coordinator: The name of the individual supervising the project. The last name should be entered in full. The first name may be abbreviated.	20	C-E-L
		Surveyor: The name of the individual completing the form. Where more than one individual is involved, dashes may be used between the names.	20	C-E-L
51	Agency	Up to two agencies may be entered. Codes are given in Appendix A (p. 52).		
		Agency 1: Left justified code in the first four spaces.	4	A-X-L
		Agency 2: Left justified code in the last four spaces.	4	A-X-L
52	Type of Soil Sample	Full sampling implies that all horizons have been sampled. Usually this implies that the profile is considered as a benchmark site. Partial sampling implies that only a limited number of horizons have been sampled.		
		Chemical: Circle a or b or neither.	1	A-X
		Physical: Circle a or b or neither.	1	A-X
		No Sample: Do not circle any of the above.		

SITE FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
53	Sampling Technique	Free format information indicating type of statistical or non-statistical design used.	45	C-E-L
54	Notes on Site Description	Free format information worth storing in the computer bank. Please be concise and neat.	600	C-E-L

(If continuation then put X over ADDP00)

ADDP00 **SERIES** 8 2 **FORM** ☐☐☐☐☐

SOIL DESCRIPTION FORM

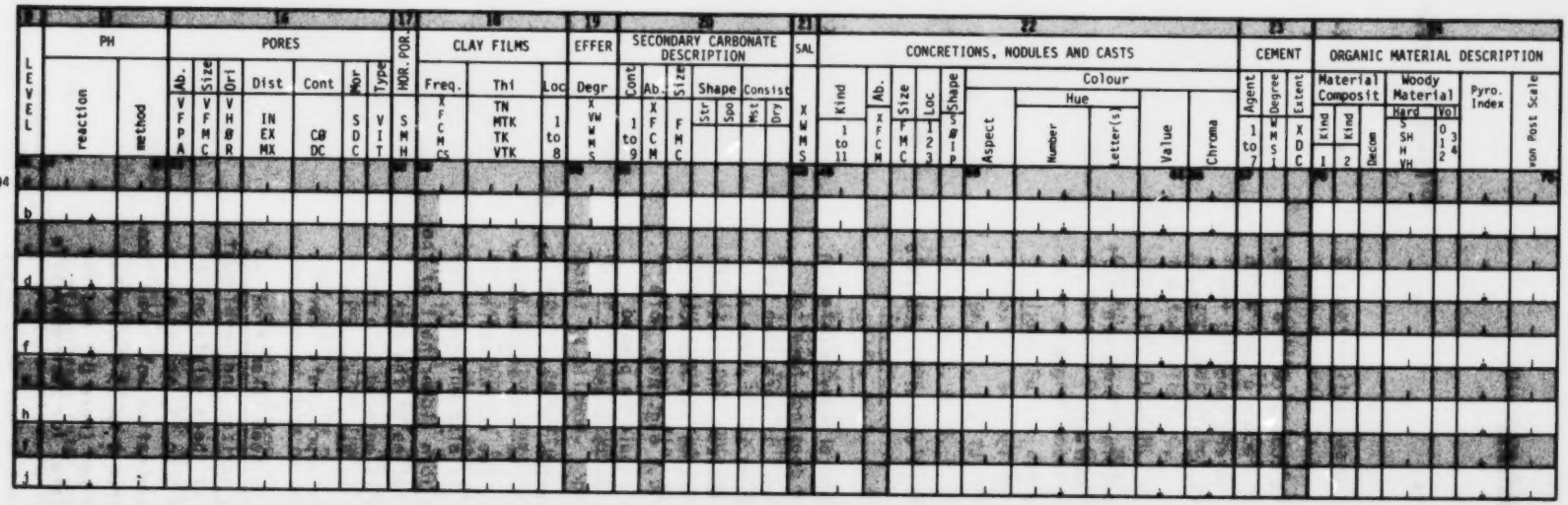
PROJECT I.D. _____ PLOT NO. _____ SURVEYOR _____ PAGE ___ OF ___

1 LEVEL	HORIZON: discont	Horizon	suffixes 1	2	3	4	subdivision	2 HORIZON DEPTH cm. UPPER	LOWER	3 HORIZON THICKNESS cm. MIN	MAX	4 HORIZON BOUNDARY Dist	Form	5 COARSE FRAGMENT DESCRIPT % by vol	Gravel <7.5 cm %	type	Cobbles 7.5–25cm %	type	Stones >25cm %	type	6 SOIL TEXTURE <2mm	7 STRUCTURE PRIMARY GRADE	CLASS	KIND	KIND MOD.	SECONDARY GRADE	CLASS	KIND	KIND MOD.	8 MST Cont %	9 CONSIST. dry	moist	wet	plast.	10 LAB SAMPLE #
a																																	
b																																	
c																																	
d																																	
e																																	
f																																	
g																																	
h																																	
i																																	
j																																	

1 LEVEL	11 COLOUR 1 aspect	Hue Number	Hue Letter(s)	Value	Chroma	COLOUR 2 aspect	Hue Number	Hue Letter(s)	Value	Chroma	12 MOTTLES AB	SI	CO	XFCM	FMC	FDP	COLOUR aspect	Hue Number	Hue Letter(s)	Value	Chroma	BOUND DIS SCD	ROOTS 1 Ab	Size	Qty	Dist	XVPA	VFMC	VHOR	INEXMX	ROOTS 2 Ab	Size	Qty	Dist	VFPA	VFMC	VHOR	INEXMX	14 HORIZON NOTES
a																																						
b																																						
c																																						
d																																						
e																																						
f																																						
g																																						
h																																						
i																																						
j																																						

Province of British Columbia Ministry of Environment Ministry of Forests Ministry of Agriculture and Food

ENV. 1098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CEMENT
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ORGANIC MATERIAL DESCRIPTION
Material Composit
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Kind 2
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Iron Post Scale
ADDP04
a
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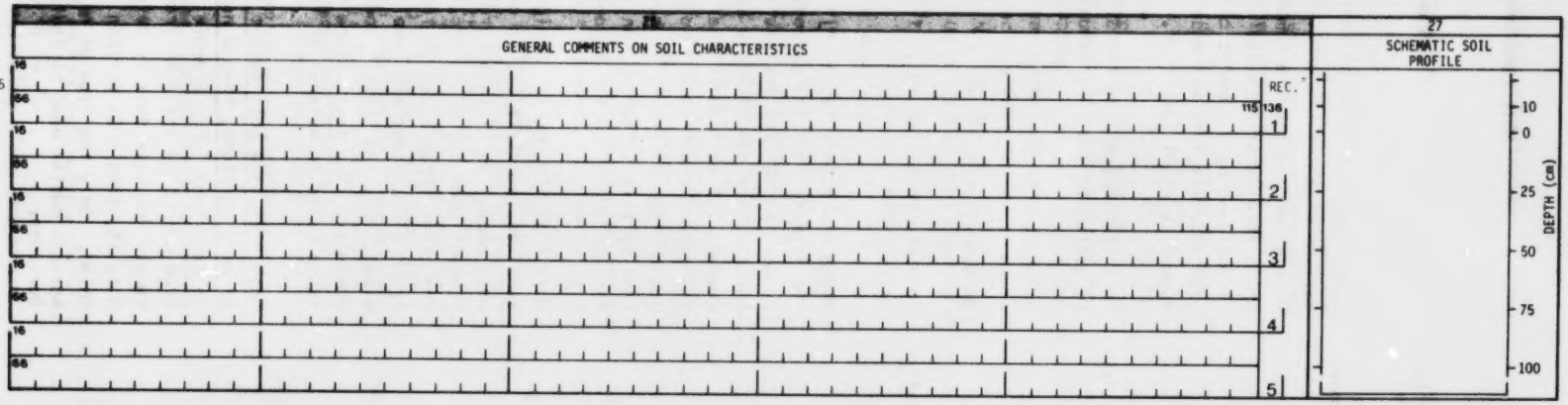
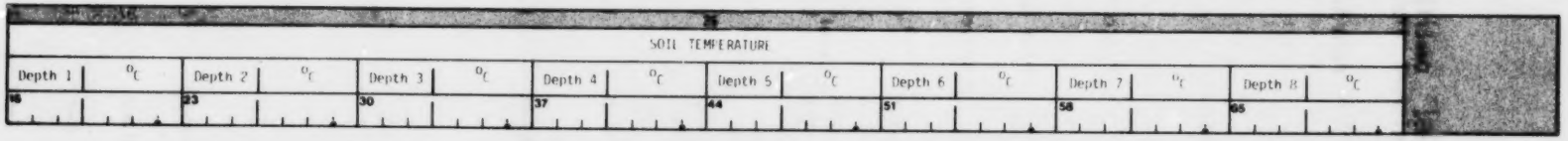

GENERAL COMMENTS ON SOIL CHARACTERISTICS
SCHEMATIC SOIL PROFILE
ADDP05
REC.
1
2
3
4
5
DEPTH (cm)
10
0
25
50
75
100


SOIL TEMPERATURE
Depth 1
Depth 2
Depth 3
Depth 4
Depth 5
Depth 6
Depth 7
Depth 8
ADDP01

SOIL FORM PROCEDURES

Item No.	Description	Comments	Field	Field
-	Form Number	Number and Year of Form Must enter appropriate numeric code from Site Form. Up to five numeric characters precede a dash which is followed by 2 numeric characters denoting the year the data form was made (e.g. 81). Note that Number is right justified.	5 2	N-X-R N-X
-	Project I.D.	This item appears on the Site Form. Complete if it is useful to you in a manual context.		
-	Plot No.	As above.		
-	Surveyor	As above.		
-	Page_ of _	Complete this item only if it is useful to you in a manual ---+		
0	Level	Alpha characters "a" to "j" are already printed on the form so that the surveyor does not have to repeat the horizon designation. If more than ten horizons are described, a second soils sheet is needed; for each additional horizon, the level on the second sheet should be slashed and replaced by one of the letters k, l, m etc.; e.g. /k. Note that in this situation, an X should be placed through /DDP00 on the second soils sheet. Note that the horizon designation (discont, horizon, suffixes, subdivision) is entered into the computer only once. As it is entered, the corresponding 'Level' code (a, b, c, etc.) is also entered. For the other three boxes on the form (lower half of the front side, upper and lower halves of the back side), only the 'Level' code is entered into the computer. You must ensure that data entered in these boxes is entered at the appropriate 'Level'. Note that if a soil sample has been taken from two or more horizons, then a new horizon and level must be described. For example, if there exists an Ah from 0 to 5 cm and a Bm from 5 to 15, and if a sample for bulk density determination was taken from 0 to 15, then a D1 horizon from 0 to 15 should be noted. Only the type of horizon (here D1) and the horizon depths need be indicated for such composite horizons.	1	A-X

SOIL FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
1	Horizon	Discontinuity: Leave blank or enter appropriate Roman numerals (e.g. II, III, IV) where strongly contrasting horizons exist. Note that no entry is needed until a contrasting horizon is encountered, i.e., do not enter "I".	4	A-X-R
		Horizon: Master horizon designations must be one of the following: O, L, F, H, LF, LH, FZ, FH, HL, HF, LFH, LHF, FLH, FHL, HFL, HLF, A, B, C, AB, BA, AC, CA, BC, CB, A&B, B&A, A&C, C&A, B&C, C&B, W, R, ASH, D1 through D20. D1, D2, etc. are non-descriptive layer designations by depth.	3	C-X-L
		Suffixes: Suffix entry may be one or more of the following, subject to certain restrictions: CA, CC, CO, SA, CJ, EJ, TJ, FJ, NJ, GJ, GF, HF, B, C, E, T, F, G, H, K, M, N, P, S, U, X, Y, Z. A maximum of 4 suffix codes can be used.		
		Suffix 1	2	A-X-L
		Suffix 2	2	A-X-L
		Suffix 3	2	A-X-L
		Suffix 4	2	A-X-L
		Note that for a Btgj horizon, for example, Suffix 1 is T_ and Suffix 2 is G J. Also note that J by itself is not considered to be a suffix.		
		Subdivision: Leave blank or enter one numeric characteric (e.g., "1", '2"), where appropriate.	1	N
2	Horizon Depth	Upper Horizon Boundary: One digit after the decimal point is allowed. Special symbols such as >, <, or + are not permitted.	4,1	N-X-R
		Lower Horizon Boundary: The value of the Lower Horizon Boundary for the lowest horizon in the pit usually will be the depth of the pit. Thus, if a pit is 105 cm in depth, the boundary information for a BC horizon may be 95.0 - 105.0. This does not mean that the BC horizon necessarily stops at 105 cm, but rather that it is known to exist only to that depth. The only exception to this would be in the case of Rock or some other impenetrable horizon. In such situations leave Lower Horizon Boundary blank.	4,1	N-X-R
3	Horizon Thickness	Min: No decimals or other special characters permitted.	3	N-X-R
		Max: As above.	3	N-X-R
4	Horizon Boundary	Distinctness: Enter one of the following alpha characters only: N, D, G, C, A.	1	A-X
		Form: Enter one of the following alpha characters only: S, W, I, B.	1	A-X
		See Appendix B (p. 54) for explanation of codes.		

SOIL FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
5	Coarse Fragment Description	% by Vol:	3	N-X-R
		Gravel:		
		% by volume	3	N-X-R
		type: See Appendix B (p. 54)	1	A-X
		Cobbles:		
		% by volume	3	N-X-R
		type: See Appendix B (p. 54)	1	A-X
		Stones:		
		% by volume	3	N-X-R
		type: See Appendix B (p. 54)	1	A-X
		A blank for percent means that no estimate was made. Enter the number "0" when no coarse fragments are present.		
6	Soil Texture	Entry may be one of the following only: S, LS, SL, L, SCL, SC, SIL, SI, SICL, CL, SIC, C, HC, VCS, CS, MS, FS, VFS, LVCS, LCS, LMS, LFS, LVFS, VCSL, CSL, MSL, FSL, VFSL. See Appendix B (p. 54) for explanation of codes. Information concerning coarse fragments is entered under item 5.	4	A-X-L
7	Structure	Grade: Enter one of the following alpha codes only: W, WM, M, MS, S.	2	A-X-L
		Class: Enter one of the following alpha codes only: VF, VFF, F, FM, M, MC, C, VC.	3	A-X-L
		Kind: Enter one of the following alpha codes only: ABK, SBK, GR, PL, PR, COL, SGR, MA, CDY.	3	A-X-L
		Kind Modifier: Leave blank or enter PS where appropriate.	2	A-X
		See Appendix B (p. 54) for explanation of codes.		
8	Moisture	Enter one of the following: D, M, W (Appendix B, p. 55)	1	A-X
9	Consistence	Dry: Enter either 1, 2, 3, 4, 5, 6 or 7.	1	N-X
		Moist: Enter either 1, 2, 3, 4, 5 or 6.	1	N-X
		Wet: Enter either 1, 2, 3 or 4.	1	N-X
		Plasticity: Enter either 1, 2, 3 or 4.	1	N-X
		Codes are explained in Appendix B (p. 55).		
10	Lab Sample	Enter a 1 if the horizon was sampled for any laboratory analyses. Otherwise leave blank.	1	N-X
11	Colour 1	Aspect: Enter appropriate numeric code (Appendix B, p. 55).	2	N-X-R

SOIL FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
		Hue Number: Enter appropriate numeric characters. Only one character is permitted following the decimal.	3,1	N-X
		Hue Letter(s): Enter appropriate alpha characters.	2	A-X-L
		Value: Enter appropriate numeric characters. Only one character is permitted following the decimal.	2,1	N-X
		Chroma: Enter appropriate numeric characters. Only one character is permitted following the decimal.	2,1	N-X
	Colour 2	Aspect: See Colour 1.	2	N-X-R
		Hue Number: See Colour 1.	3,1	N-X
		Hue Letter(s): See Colour 1.	2	A-X-L
		Value: See Colour 1.	2,1	N-X
		Chroma: See Colour 1.	2,1	N-X
12	Mottles	Abundance: Enter appropriate code: F, C or M. If there are no mottles, enter an X. A blank indicates that the item was not described.	1	A-X
		Size: Enter appropriate code: F, M or C.	1	A-X
		Contrast: Enter appropriate code: F, D or P.	1	A-X
		Colour: Aspect: See Colour 1.	2	N-X-R
		Hue Number: See Colour 1.	3,1	N-X
		Hue Letter(s): See Colour 1.	2	A-X-L
		Value: See Colour 1.	2,1	N-X
		Chroma: See Colour 1.	2,1	N-X
		Boundary Distinctness: Enter appropriate code: S, C or D. Codes are explained in Appendix B (p. 56).	1	A-X
13	Roots 1	Abundance: Enter appropriate code where roots occur: V, F, P or A. If there are absolutely no roots, enter an X. A blank indicates that the item was not described.	1	C-X
		Size: Enter appropriate code: V, F, M or C.	1	A-X
		Orientation: Enter appropriate code: V, H, O or R.	1	A-X
		Distribution: Enter appropriate code: IN, EX or MX. Codes are explained in Appendix B (p. 56).	2	A-X
	Roots 2	Abundance: See Roots 1.	1	C-X
		Size: See Roots 1.	1	A-X
		Orientation: See Roots 1.	1	A-X
		Distribution: See Roots 1.	2	A-X
14	Horizon Notes	Enter free-format comments related to individual horizons.	30	C-E-L

SOIL FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
15	pH	Reaction: Enter actual pH value and not the reaction class. One character is permitted following the decimal.	3,1	N-X
		Method: Enter appropriate code from 1 to 10 (Appendix B, p. 56).	2	N-X-R
16	Pores	Abundance: See item 13. Note that X is not appropriate here.	1	A-X
		Size: See item 13.	1	A-X
		Orientation: See item 13.	1	A-X
		Distribution: See item 13.	2	A-X
		Continuity Class: Enter appropriate code: CO or DC.	2	A-X
		Morphology Class: Enter appropriate code: S,D or C.	1	A-X
		Types of Pores: Enter appropriate code: V, I or T.	1	A-X
17	Horizon Porosity	Enter appropriate code: S, M or H (Appendix B, p. 57).	1	A-X
18	Clay Films	Frequency Classes: Enter appropriate code: F, C, M or CS. If there are no clay films, enter an X_. A blank indicates that the item was not assessed.	2	A-X
		Thickness Class: Enter appropriate code: TN, MTK, TK or VTK.	3	A-X
		Location: Enter appropriate code: 1, 2, 3, 4, 5, 6, 7 or 8. Codes are explained in Appendix B (p. 57).	1	N-X
19	Effervescence	Effervescence: Enter appropriate code: VW, W, M, or S. No effervescence is indicated by an X_ entry. If left blank it is assumed that effervescence was not tested. Codes are explained in Appendix B (p. 57).	2	A-X
20	Secondary Carbonate Description	Continuity: Enter appropriate code from 1 to 9.	1	N-X
		Abundance: Enter appropriate code: F, C or M. An X entry indicates an absence of secondary carbonates. If left blank it is assumed that secondary carbonates were not examined.	1	A-X
		Size: Enter appropriate code: F, M, C.	1	A
		Shape: Enter appropriate streaked code: V, H or R; and appropriate spotted code: C, O, I.	1	A-X
		Consistence: Enter appropriate moist code from 1 to 6; and/or appropriate dry code from 1 to 7. Codes are explained in Appendix B (p. 57).	1	N-X

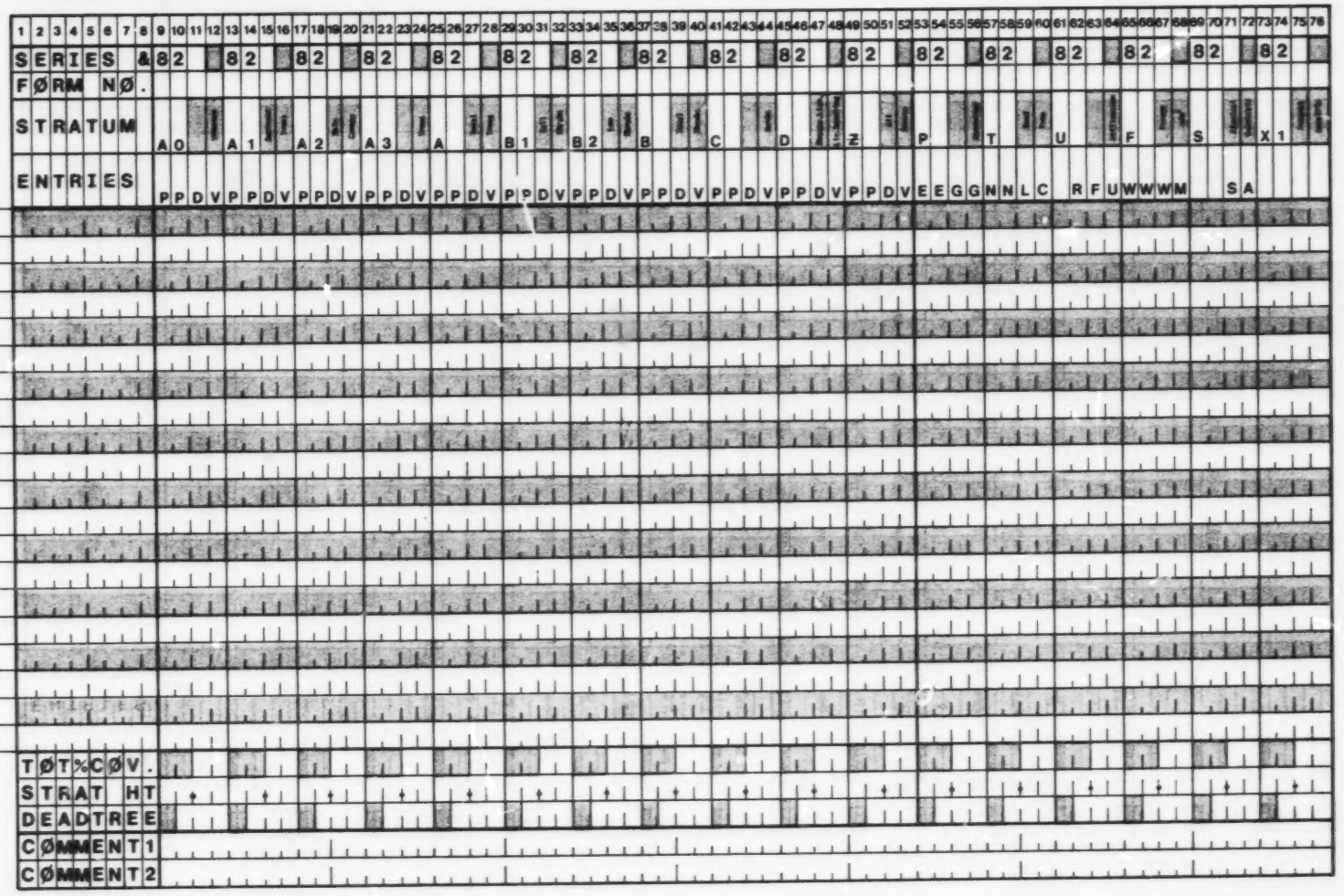
SOIL FORM PROCEDURES (Continued)

Item No.	Description	Comments	Field Length	Field Description
21	Salinity	Salinity: Enter appropriate code: W, M, S (Appendix B, p. 58). An X entry indicates the absence of salinity; if left blank it is assumed that salinity was not assessed.	1	A-X
22	Concretions, Nodules, Casts	Kind: Enter appropriate code from 1 to 11.	2	N-X-R
		Abundance: Enter appropriate code: F, C or M. An X entry indicates absence. If left blank it is assumed that concretions, nodules, or casts were not assessed.	1	A-X
		Size: Enter appropriate code: F, M or C.	1	A-X
		Location: Enter appropriate code: 1, 2 or 3.	1	N-X
		Shape: Enter appropriate code: S, O, I or P. See Appendix B (p. 58) for explanation of codes.	1	A-X
		Colour: Aspect: See item 11.	2	N-X-R
		Hue Number: See item 11.	3,1	N-X
		Hue Letter(s): See item 11.	2	A-X-L
		Value: See item 11.	2,1	N-X
		Chroma: See item 11.	2,1	N-X
23	Cementation	Agent: Enter appropriate code from 1 to 7.	1	N-X
		Degree: Enter appropriate code: W, M, S or I.	1	A-X
		Extent: Enter appropriate code: C or D. Enter an X if cementation is absent. See Appendix B (p. 58) for explanation of codes.	1	A-X
24	Organic Material Description	Kind 1: Enter appropriate code from 1 to 8.	1	A-X
		Kind 2: As above.	1	A-X
		Decomposition: Enter appropriate code: N, S, M or H.	1	A-X
		Woody Material Hardness: Enter appropriate code: S, SH, H or VH.	2	A-X-L
		Woody Material Volume: Enter appropriate code: 0, 1, 2, 3 or 4.	1	N-X
		Pyrophosphate Index: Enter appropriate value. One numeric character only follows the decimal.	2,1	N-X
		von Post Scale: Enter appropriate code from 1 to 10. See Appendix B (p. 59) for explanation of codes.	2	N-X-R
25	General Comments	Enter free-format additional notes on soil profile. Brevity is preferred.	500	C-E-L

26	Soil Temperature	Enter depth of measurement in cm and temperature in degrees celsius.		
		Depth 1	3	N-X-R
		°C	4	N-X-R
		Depth 2	3	N-X-R
		°C	4	N-X-R
		Depth 3	3	N-X-R
		°C	4	N-X-R
		Depth 4	3	N-X-R
		°C	4	N-X-R
		Depth 5	3	N-X-R
		°C	4	N-X-R
		Depth 6	3	N-X-R
		°C	4	N-X-R
		Depth 7	3	N-X-R
		°C	4	N-X-R
		Depth 8	3	N-X-R
		°C	4	N-X-R
27	Schematic Soil Profile	This is not entered into the data file.		

VEGETATION DESCRIPTION FORM

PROJECT ID. _____ PLOT NO. _____ SURVEYOR _____ PAGE ___ OF ___

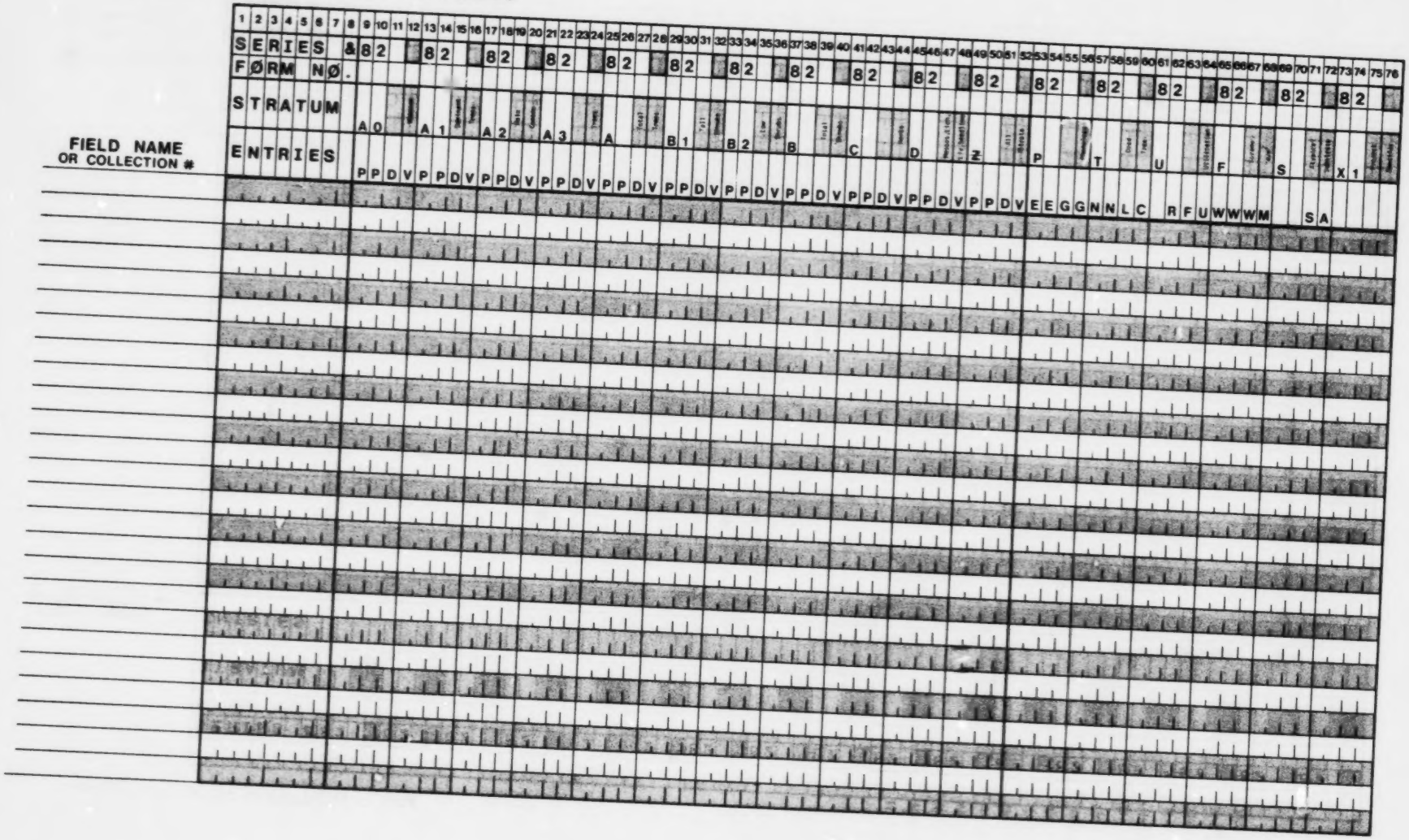


FIELD NAME OR COLLECTION #

Province of British Columbia
Ministry of Environment
Ministry of Forests

ENV 1915

VEGETATION DESCRIPTION FORM (cont.)



VEGETATION FORM PROCEDURES

How To Use The Form

The usual way of using the form is virtually the same as the method employed over the last several years. Each sheet applies to a specific plot. The SERIES, previously referred to as the year, and the FORM NUMBER are placed on the first and second rows of columns 9 through 12. Thus if the SERIES is 82 and the FORM NUMBER is 01234, then 820 would appear in the first row and 1234 in the second. Next a field name may be placed on the sheet followed by the 4-3-1 code from the Ministry of Forests' Vegetation Coding List. This listing represents the standard for all plant codes. Usually the first four letters of the genus and the first three letters of the species name are coded, with an optional code for any varieties. Exceptions do exist and thus the Vegetation Coding List should be checked. The field name is not entered into the computer; it is only for the convenience of the surveyor. The field name (or collection number) may be used when the appropriate code is not known in the field; once the code is known it must be filled. The STRATUM and ENTRIES rows are both coded, as indicated below. For range surveys, total shrubs, forbs, and grasses are indicated by writing LØSHRUB, FØRB, and GRASS, respectively, in the last three lines under ENTRIES. The total value is then recorded in the appropriate column. TOTAL % COVER, STRATA HEIGHT in metres, and number of DEAD TREES can be found at the bottom of the sheet. Each of these pertains to a particular stratum. Two rows for COMMENTS follow these. The back of the form is identical to the front with the exception that the bottom five lines contain spaces for more species. The SERIES and FORM NUMBER must be entered on the back as well, provided that data is entered there.

What the Codes Mean

A0: Veterans

A1: Dominant Trees

A2: Main Canopy

A3: Trees

A_: Total Trees

B1: Tall Shrubs

B2: Low Shrubs

B_: Total Shrubs

C_: Herbs

D_: Mosses, Lichens, and Live Seedlings

Z_: All Strata

Allowable Entries For All of the Above Strata

PP: percent cover on an area basis, from . 1 to 0 1 to 9 9. Only the digits 0 through 9 and the decimal point may be entered; <, >, etc. are not allowed. A percent cover of 100% is assumed to be adequately represented by a PP entry of 99.

D: numeric distribution code 1 to 9. See Appendix C (p. 60) for code values.

V: numeric vigor code, from 0 to 4 (+ sign disallowed). See Appendix C (p. 60) for code values.

Additional Allowable Entries for All of the Above Strata

(Strike out PP on form in Entries and replace by appropriate code.)

CC: percent estimated composition: an estimate of the percent of the total green weight (g/m^2) of a plot occupied by a given species. CC would be used in place of D and V. Thus ENTRIES would be PPCC.

LL: percent cover on a line intersect basis. Equivalent to PP but based on a line instead of an area. Thus ENTRIES would be LLDV or LL__.

Other Allowable STRATA and ENTRIES

(Strike out appropriate STRATA and ENTRIES on form and replace with codes below as required.)

Ø_: Forbs (PPCC)

This STRATUM does not occur on the form. It is used for range surveys, where interest centres on this group of plants.

G_: Grasses (PPCC)

This STRATUM does not occur on the form. It could be used for range surveys.

P_: Phenology (EEGG)

EE: vegetative code, from 0 to 10. See Appendix C (p. 60) for code values.

GG: generative code, from 0 to 11. See Appendix C (p. 60) for code values.

P_: Phenology (__AA)

AA: The percent of the total annual growth on a mass basis which has been reached at the time of the survey. This code is not printed on the form. It is to be used for surveys such as range inventory.

T_: Dead Tree (NNLC)

NN: number of stems/plot from 01 to (hypothetically) 99.

L: a stratum or layer code. A0, A1, A2, A3, B1, B2, C, and D are coded 0, 1, 2, 3, 4, 5, 6, and 7, respectively.

C: snag class; dead, loose bark, clean, broken, decomposed, down material, and stump are coded 1 to 7, respectively.

U_: Utilization (_RFU)

R: range condition indicator; a numeric code indicating whether a range species is increasing, decreasing, invading, or unaffected by grazing, coded 1, 2, 3, and 0, respectively.

F: form utilization class, from 1 to 8. See Appendix C (p. 61) for code values.

U: utilization rating, from 0 to 4. See Appendix C (p. 61) for code values.

F_: Forage (WWWM)

WWW: measured weight in g/m^2 from 001 to 999 (hypothetically).

M: method; estimated green, estimated air dried, estimated oven dried, measured green, measured air dried, and measured oven dried are coded 1 to 6, respectively.

F_: Forage (WWWU)

WWW: measured weight in g/m^2 from 001 to 999 (hypothetically).

U: percent utilization code; enter by class code the estimated proportion of annual growth to date of survey that has been removed, as a percentage of the total green weight which would otherwise have been expected for each plant group. This code is not printed on the form. It is inserted as an ENTRY for range surveys. See Appendix C (p. 61) for code values.

F_: Forage (EEEU)

EEE: estimated weight in g/m^2 from 001 to 999 (hypothetically). This code is not printed on the form. It is used in place of WWW when estimated weights are recorded.

U: percent utilization code; enter by class code the estimated proportion of annual growth to date of survey that has been removed, as a percentage of the total green weight which would otherwise have been expected for each plant group. This code is not printed on the form. It is inserted as an ENTRY for range surveys. See Appendix C (p. 61) for code values.

S_: Atypical substrate (__SA)

S: substrate code; epilithic, epiphytic, epixylic, episolic, and mosses on humus are coded 1 to 5, respectively.

A: abundance code from 1 to 3 to indicate rare (<25% cover), frequent (26-75%), and abundant (>76%) respectively.

X1: Project Specific - any numeric coding deemed useful to the project at hand. For any column which is to be used, one or more letters for ENTRIES at the top of the column must be entered.

Note that SERIES & FORM NO. is always numeric. STRATUM is always one letter followed by either a blank or a number. ENTRIES are always alphabetic characters. Any column which contains data must be supported by an ENTRIES character. Species codes are four letters, three letters, and (optional) one numeric character. Data in the main part of the sheet are always numeric, occasionally with a decimal. TOT%COV, STRAT HT, with an assumed decimal, and DEAD TREE are always numeric. COMMENTS may consist of letters, numbers, and special symbols. All letters anywhere on the form are assumed to be upper case.

Changing Codes for Project Specific Reasons

Each stratum (or equivalent) and entry has a code, as discussed above, which is entered into the computer along with the rest of the data. You will also note that the boxes containing the codes for STRATUM and ENTRIES are twice as high as the other boxes on the form. In each case the value printed on the form may be crossed out and replaced with other codes, printed in the upper portion of the box. The only restrictions are that under any given STRATUM the codes for the ENTRIES must be unique, and in both cases, the formats regarding letters and numbers must be followed as given above. For example PP under AO through Z always indicates a two digit percent cover on an area basis or a decimal point followed by a one digit numeric character. If a line transect were being used, one might cross out the PP and enter LL (in the appropriate space provided immediately above) for percent cover on a line intersect basis. The fact that L is also a code for ENTRIES under Dead Tree is not a source of confusion since it is the combination of STRATUM code and ENTRIES code which must be unique. Any new STRATUM or ENTRIES code should be approved by the Systems Analyst of the Terrestrial Studies Branch to avoid duplication resulting from different people using different codes to mean the same thing.

Using a Sheet for More Than One Plot

The form may also be used in a manner similar to a releve table, whereby more than one series and form number may be coded on the same sheet. The computer assumes that the series and form number for each of the eighteen strata (or equivalent) is the same as the series and form number adjacent to it on the left, unless otherwise specified. For example, if one were doing a grassland survey where only Low Shrubs (B2) and Herbs (C_) were of interest, the sheet might look as follows:

821		821		821	
2345		2346		2347	etc.
B2 A0	C A1	B2 A2	C A3	B2 A4	
PPDV	PPDV	PPDV	PPDV	PPDV	

The series and form number need be entered only when they are different from the STRATUM (or equivalent) on the immediate left. Thus, potentially anywhere from one to 34 plots may be coded on one vegetation sheet. Each one of the plots, however, must have a separate Site Description Form; an exception to this is discussed below. Note that if all strata are not being examined, this should be stated under COMMENT1 or COMMENT2; the phrase PARTIAL SAMPLE or PS: could for example be entered under COMMENT1 beginning in column 9.

How to Handle Subplot Data

Subplots can be coded on the same form. Subplots are identified by using alphabetic characters. These characters are entered in the shaded spaces in the top row of the form where SERIES and FORM NO. are recorded. For example, if the A0 stratum plus three subplots in the A1 stratum are sampled for plot 82-12345, then 821_|821A|821B|821C would be coded sequentially in row 1. The alphabetic characters are coded in the shaded boxes under columns 16, 20, and 24. The second row would have the same numbers 2345|2345|2345|2345 recorded sequentially in columns 9-24. In the row for STRATUM, A0 and A1 are left as they are, the 2 in A2 is crossed off and replaced by a 1, and the 3 in A3 is crossed off and replaced with a 1. The correct coding for these subplots is illustrated below. It is important to remember that the three subplots in the example all refer to the same site form.

821_	821A	821B	821C
2345	2345	2345	2345
A0	A1	A1	A1
PPDV	PPDV	PPDV	PPDV

APPENDIX A: SITE CODES

Item 12: Terrain Classification

Texture

SIZE mm / ROUNDNESS	256	64	2	.062	.0039
ROUNDED	BOULDERY b	COBBLY k	PEBBLY p		
ROUND OR ANGULAR			SANDY s	SILTY #	CLAYEY c
ROUNDED		GRAVELLEY g			
					FINES f
ANGULAR	BLOCKY a	RUBBLY r			

Organic: e-fibric m-mesic h-humic

Genetic Material	Qualifying Descriptor	Surface Expression	Modifying Process
Anthropogenic -- A	Clastic	Apron ------- a	Avalanched ----- A
Colluvial ------ C	Glacial -- G	Blanket ----- b	Bevelled ------- B
Eolian --------- E	Organic	Fan --------- f	Cryoturbated --- C
Fluvial -------- F	Bog ------ B	Hummocky ---- h	Deflated ------- D
Ice ------------ I	Fen ------ F	Level ------- l	Channelled ----- E
Lacustrine ----- L	Swamp ---- S	Subdued ----- m	Failing -------- F
Morainal ------- M	Process:	Ridged ------ r	Kettled -------- H
Organic -------- O	Active --- A	Steep ------- s	Karst modified - K
Bedrock -------- R	Inactive - I	Terraced ---- t	Nivated -------- N
Saprolite ------ S		Veneer ------ v	Piping --------- P
Volcanic ------- V			Soliflucted ---- S
Marine --------- W			Gullied -------- V
Undifferentiated --- U			Washed --------- W

Note: # for silty will be entered into the computer as a dollar sign: $.

Item 13: Physiographic Subdivision

WESTERN SYSTEM	1. OUTER MOUNTAIN AREA	1. ST ELIAS MOUNTAINS	0.	1. FAIRWEATHER RANGES 2. ICEFIELD RANGES 3. ALSEK RANGES 4. DUKE DEPRESSION
		2. INSULAR MOUNTAINS	1. QUEEN CHARLOTTE MOUNTAINS	1. SKIDEGATE PLATEAU 2. QUEEN CHARLOTTE RANGES
			2. VANCOUVER ISLAND MOUNTAINS	1. VANCOUVER ISLAND RANGES 2. ALBERNI BASIN 3. ESTEVAN COASTAL PLAIN
	2. COASTAL TROUGH	1. HECATE DEPRESSION	1. QUEEN CHARLOTTE LOWLAND	0. 1. ARGONAUT PLAIN
			2. NAHWITTI LOWLAND	0. 1. SUQUASH BASIN
			3. HECATE LOWLAND	0. 1. MILBANKE STRANDFLAT
		2. GEORGIA DEPRESSION	1. GEORGIA LOWLAND	0. 1. FRASER LOWLAND
			2. NANAIMO LOWLAND	
INTERIOR SYSTEM	3. COAST MOUNTAIN AREA	1. COAST MOUNTAINS	1. BOUNDARY RANGES 2. KITIMAT RANGES	0.
			3. PACIFIC RANGES	0. 1. CHILCOTIN RANGES
		2. CASCADE MOUNTAINS	0. 1. SKAGIT RANGE 2. HOZAMEEN RANGE 3. OKANAGAN RANGE	0.
	4. NORTHERN PLATEAU AND MOUNTAIN AREA	1. YUKON PLATEAU	1. TAGISH HIGHLAND 2. TESLIN PLATEAU 3. NISUTLIN PLATEAU	0.
		2. LIARD PLAIN	0.	0.
	5. CENTRAL PLATEAU AND MOUNTAIN AREA	1. STIKINE PLATEAU	1. TAHLTAN HIGHLAND 2. TAKU PLATEAU	0.
			3. KAWDY PLATEAU	0. 1. ATSUTLA RANGE
			4. NAHLIN PLATEAU 5. TANZILLA PLATEAU 6. KLASTLINE PLATEAU 7. SPATSIZI PLATEAU	0.
		2. SKEENA MOUNTAINS	0. 1. KLAPPAN RANGE 2. TATLATUI RANGE 3. EAGLENEST RANGE 4. SICINTINE RANGE 5. SLAMGEESH RANGE	0.

INTERIOR SYSTEM CONTINUED	5. CENTRAL PLATEAU AND MOUNTAIN AREA Continued	3. NASS BASIN	0.	0.
		4. HAZELTON MOUNTAINS	1. NASS RANGES 2. KISPIOX RANGE 3. BULKLEY RANGES 4. TAHTSA RANGES	0.
		5. CASSIAR MOUNTAINS	1. DEASE PLATEAU 2. STIKINE RANGES 3. KECHIKA RANGES 4. SIFTON RANGES	0.
		6. OMINECA MOUNTAINS	1. SWANNELL RANGES 2. FINLAY RANGES 3. HOGEM RANGES	0.
	6. ROCKY MOUNTAIN TRENCH	0.	0.	0.
	7. SOUTHERN PLATEAU AND MOUNTAIN AREA	1. INTERIOR PLATEAU	1. FRASER BASIN	0. 1. NECHAKO PLAIN
			2. NECHAKO PLATEAU	0. 1. MCGREGOR PLATEAU
			3. FRASER PLATEAU 4. THOMPSON PLATEAU 5. QUESNEL HIGHLAND 6. SHUSWAP HIGHLAND 7. OKANAGAN HIGHLAND	0.
		2. COLUMBIA MOUNTAINS	1. SELKIRK MOUNTAINS 2. CARIBOO MOUNTAINS 3. PURCELL MOUNTAINS 4. MONASHEE MOUNTAINS	0.
	8. MCKENZIE MOUNTAIN AREA	1. LIARD PLATEAU	0.	0.
EASTERN SYSTEM	9. ROCKY MOUNTAIN AREA	1. ROCKY MOUNTAINS	1. BORDER RANGES	1. GALTON RANGE 2. MACDONALD RANGE 3. CLARK RANGE 4. FLATHEAD BASIN
			2. CONTINENTAL RANGES	1. FRONT RANGES 2. KOOTENAY RANGES 3. PARK RANGES
			3. HART RANGES	1. MISINCHINKA RANGES
			4. MUSKWA RANGES	1. RABBIT PLATEAU
		2. ROCKY MOUNTAIN FOOTHILLS	0.	0.
	0. INTERIOR PLAINS	1. ALBERTA PLATEAU	0. 1. FORT NELSON LOWLAND	0.

Numeric code to be given on data form (e.g. 1223 for Estevan Coastal Plain; or 3120 for Kitimat Ranges).

Item 17: Soil Classification

Order	Great Group	Subgroup
Brunisolic	Melanic Brunisol	Orthic Melanic Brunisol O.MB
		Eluviated Melanic Brunisol E.MB
		Gleyed Melanic Brunisol GL.MB
		Gleyed Eluviated Melanic Brunisol GLE.MB
	Eutric Brunisol	Orthic Eutric Brunisol O.EB
		Eluviated Eutric Brunisol E.EB
		Gleyed Eutric Brunisol GL.EB
		Gleyed Eluviated Eutric Brunisol GLE.EB
	Sombric Brunisol	Orthic Sombric Brunisol O.SB
		Eluviated Sombric Brunisol E.SB
		Duric Sombric Brunisol DU.SB
		Gleyed Sombric Brunisol GL.SB
		Gleyed Eluviated Sombric Brunisol GLE.SB
	Dystric Brunisol	Orthic Dystric Brunisol O.DYB
		Eluviated Dystric Brunisol E.DYB
		Duric Dystric Brunisol DU.DYB
		Gleyed Dystric Brunisol GL.DYB
		Gleyed Eluviated Dystric Brunisol GLE.DYB
Chernozemic	Brown	Orthic Brown O.B
		Rego Brown R.B
		Calcareous Brown CA.B
		Eluviated Brown E.B
		Solonetzic Brown SZ.B
		Gleyed Brown GL.B
		Gleyed Rego Brown GLR.B
		Gleyed Calcareous Brown GLCA.B
		Gleyed Eluviated Brown GLE.B
		Gleyed Solonetzic Brown GLSZ.B
	Dark Brown	Orthic Dark Brown O.DB
		Rego Dark Brown R.DB
		Calcareous Dark Brown CA.DB
		Eluviated Dark Brown E.DB
		Solonetzic Dark Brown SZ.DB
		Gleyed Dark Brown GL.DB
		Gleyed Rego Dark Brown GLR.DB
		Gleyed Calcareous Dark Brown GLCA.DB
		Gleyed Eluviated Dark Brown GLE.DB
		Gleyed Solonetzic Dark Brown GLSZ.DB

Order	Great Group	Subgroup
	Black	Orthic Black O.BL
		Rego Black R.BL
		Calcareous Black CA.BL
		Eluviated Black E.BL
		Solonetzic Black SZ.BL
		Gleyed Black GL.BL
		Gleyed Rego Black GLR.BL
		Gleyed Calcareous Black GLCA.BL
		Gleyed Eluviated Black GLE.BL
		Gleyed Solonetzic Black GLSZ.BL
	Dark Gray	Orthic Dark Gray O.DG
		Rego Dark Gray R.DG
		Calcareous Dark Gray CA.DG
		Solonetzic Dark Gray SZ.DG
		Gleyed Dark Gray GL.DG
		Gleyed Rego Dark Gray GLR.DG
		Gleyed Calcareous Dark Gray GLCA.DG
		Gleyed Solonetzic Dark Gray GLSZ.DG
Cryosolic	Turbic Cryosol	Orthic Turbic Cryosol O.TC
		Brunisolic Turbic Cryosol BR.TC
		Regosolic Turbic Cryosol R.TC
		Gleysolic Turbic Cryosol GL.TC
	Static Cryosol	Orthic Static Cryosol O.SC
		Brunisolic Static Cryosol BR.SC
		Regosolic Static Cryosol R.SC
		Gleysolic Static Cryosol GL.SC
	Organic Cryosol	Fibric Organic Cryosol FI.OC
		Mesic Organic Cryosol ME.OC
		Humic Organic Cryosol HU.OC
		Terric Fibric Organic Cryosol TFI.OC
		Terric Mesic Organic Cryosol TME.OC
		Terric Humic Organic Cryosol THU.OC
		Glacic Organic Cryosol GC.OC
Gleysolic	Humic Gleysol	Orthic Humic Gleysol O.HG
		Rego Humic Gleysol R.HG
		Fera Humic Gleysol FE.HG
	Gleysol	Orthic Gleysol O.G
		Rego Gleysol R.G
		Fera Gleysol FE.G
	Luvic Gleysol	Orthic Luvic Gleysol O.LG
		Humic Luvic Gleysol HU.LG
		Fera Luvic Gleysol FE.LG
		Fragic Luvic Gleysol FR.LG

Order	Great Group	Subgroup
Luvisolic	Gray Brown Luvisol	Orthic Gray Brown Luvisol O.GBL
		Brunisolic Gray Brown Luvisol BR.GBL
		Podzolic Gray Brown Luvisol PZ.GBL
		Gleyed Gray Brown Luvisol GL.GBL
		Gleyed Brunisolic Gray Brown Luvisol GLBR.GBL
		Gleyed Podzolic Gray Brown Luvisol GLPZ.GBL
	Gray Luvisol	Orthic Gray Luvisol O.GL
		Dark Gray Luvisol D.GL
		Brunisolic Gray Luvisol BR.GL
		Podzolic Gray Luvisol PZ.GL
		Solonetzic Gray Luvisol SZ.GL
		Fragic Gray Luvisol FR.GL
		Gleyed Gray Luvisol GL.GL
		Gleyed Dark Gray Luvisol GLD.GL
		Gleyed Brunisolic Gray Luvisol GLBR.GL
		Gleyed Podzolic Gray Luvisol GLPZ.GL
		Gleyed Solonetzic Gray Luvisol GLSZ.GL
		Gleyed Fragic Gray Luvisol GLFR.GL
Organic	Fibrisol	Typic Fibrisol TY.F
		Mesic Fibrisol ME.F
		Humic Fibrisol HU.F
		Limno Fibrisol LM.F
		Cumulo Fibrisol CU.F
		Terric Fibrisol T.F
		Terric Mesic Fibrisol TME.F
		Terric Humic Fibrisol THU.F
		Hydric Fibrisol HY.F
	Mesisol	Typic Mesisol TY.M
		Fibric Mesisol FI.M
		Humic Mesisol HU.M
		Limno Mesisol LM.M
		Cumulo Mesisol CU.M
		Terric Mesisol T.M
		Terric Fibric Mesisol TFI.M
		Terric Humic Mesisol THU.M
		Hydric Mesisol HY.M
	Humisol	Typic Humisol TY.H
		Fibric Humisol FI.H
		Mesic Humisol ME.H
		Limno Humisol LM.H
		Cumulo Humisol CU.H
		Terric Humisol T.H
		Terric Fibric Humisol TFI.H
		Terric Mesic Humisol TME.H
		Hydric Humisol HY.H
	Folisol	Typic Folisol TY.FO

Order	Great Group	Subgroup
Podzolic	Humic Podzol	Orthic Humic Podzol O.HP
		Ortstein Humic Podzol OT.HP
		Placic Humic Podzol P.HP
		Duric Humic Podzol DU.HP
		Fragic Humic Podzol FR.HP
	Ferro-Humic Podzol	Orthic Ferro-Humic Podzol O.FHP
		Ortstein Ferro-Humic Podzol OT.FHP
		Placic Ferro-Humic Podzol P.FHP
		Duric Ferro-Humic Podzol DU.FHP
		Fragic Ferro-Humic Podzol FR.FHP
		Luvisolic Ferro-Humic Podzol LU.FHP
		Sombric Ferro-Humic Podzol SM.FHP
		Gleyed Ferro-Humic Podzol GL.FHP
		Gleyed Ortstein Ferro-Humic Podzol GLOT.FHP
		Gleyed Sombric Ferro-Humic Podzol GLSM.FHP
	Humo-Ferric Podzol	Orthic Humo-Ferric Podzol O.HFP
		Ortstein Humo-Ferric Podzol OT.HFP
		Placic Humo-Ferric Podzol P.HFP
		Duric Humo-Ferric Podzol DU.HFP
		Fragic Humo-Ferric Podzol FR.HFP
		Luvisolic Humo-Ferric Podzol LU.HFP
		Sombric Humo-Ferric Podzol SM.HFP
		Gleyed Humo-Ferric Podzol GL.HFP
		Gleyed Ortstein Humo-Ferric Podzol GLOT.HFP
		Gleyed Sombric Humo-Ferric Podzol GLSM.HFP
Regosolic	Regosol	Orthic Regosol O.R
		Cumulic Regosol CU.R
		Gleyed Regosol GL.R
		Gleyed Cumulic Regosol GLCU.R
	Humic Regosol	Orthic Humic Regosol O.HR
		Cumulic Humic Regosol CU.HR
		Gleyed Humic Regosol GL.HR
		Gleyed Cumulic Humic Regosol GLCU.HR
Solonetzic	Solonetz	Brown Solonetz B.SZ
		Dark Brown Solonetz DB.SZ
		Black Solonetz BL.SZ
		Alkaline Solonetz A.SZ
		Gleyed Brown Solonetz GLB.SZ
		Gleyed Dark Brown Solonetz GLDB.SZ
		Gleyed Black Solonetz GLBL.SZ
	Solodized Solonetz	Brown Solodized Solonetz B.SS
		Dark Brown Solodized Solonetz DB.SS
		Black Solodized Solonetz BL.SS
		Dark Gray Solodized Solonetz DG.SS
		Gray Solodized Solonetz G.SS

Order	Great Group	Subgroup
Solonetzic	Solodized Solonetz (cont'd)	Gleyed Brown Solodized Solonetz GLB.SS
		Gleyed Dark Brown Solodized Solonetz GLDB.SS
		Gleyed Black Solodized Solonetz GLBL.SS
		Gleyed Dark Gray Solodized Solonetz GLDG.SS
		Gleyed Gray Solodized Solonetz GLG.SS
	Solod	Brown Solod B.SO
		Dark Brown Solod DB.SO
		Black Solod BL.SO
		Dark Gray Solod DG.SO
		Gray Solod G.SO
		Gleyed Brown Solod GLB.SO
		Gleyed Dark Brown Solod GLDB.SO
		Gleyed Black Solod GLBL.SO
		Gleyed Dark Gray Solod GLDG.SO
		Gleyed Gray Solod GLG.SO

EXPLANATION OF CODES USED FOR RECOGNIZED SOIL PHASES

Code	Phase	Brief Definition*
	SLOPE:	
1	level	0 - 0.5%
2	nearly level	0.5 - 2%
3	very gentle slopes	2 - 5%
4	gentle slopes	6 - 9%
5	moderate slopes	10 - 15%
6	strong slopes	16 - 30%
7	very strong slopes	31 - 45%
8	extreme slopes	46 - 70%
9	steep slopes	70 -100%
10	very steep slopes	> 100%
	WATER EROSION:	
W1	slightly water-eroded	Up to 25% original A horizon eroded.
W2	moderately water-eroded	Approximately 25-75% original A horizon eroded.
W3	severely water-eroded	More than 75% original A horizon eroded.
W4	gullied land	Land dissected by deep gullies.
	WIND EROSION:	
D1	wind-eroded	Approximately 25-75% original A horizon eroded.
D2	severely wind-eroded	More than 75% original A horizon eroded.
D3	blown-out land	Most of original solum eroded.
	SOIL DEPOSITION:	
OB	overblown deposition	Significant deposit of wind-blown material.
OW	overwash deposition	Significant deposit of water-eroded material.
	STONINESS:	Fragments >15 cm diameter.
S1	nonstony	<0.01% of surface, stones >30 m apart.
S2	slightly stony	0.01-0.1% of surface, stones 10-30 m apart.
S3	moderately stony	0.1-3% of surface, stones 2-10 m apart.
S4	very stony	3-15% of surface, stones 1-2 m apart.
S5	exceedingly stony	15-50% of surface, stones 0.1-1 m apart.
S6	excessively stony	>50% of surface, stones <0.1 m apart.
	ROCK OUTCROP:	
R1	nonrocky	<2% of surface, >75 m apart.
R2	slightly rocky	2-10% of surface, 25-75 m apart.
R3	moderately rocky	10-25% of surface, 10-25 m apart.
R4	very rocky	25-50% of surface, 2-10 m apart.
R5	exceedingly rocky	50-90% of surface, <2 m apart.
R6	excessively rocky	>90% of surface is bedrock.
PT	PEATY	Mineral soil with >15 cm organic matter.

*More complete definitions are provided in The Canadian System of Soil Classification (C.S.S.C., 1978, pp. 127-129).

ADDITIONAL CODED SOIL PHASES (AND VARIANTS)

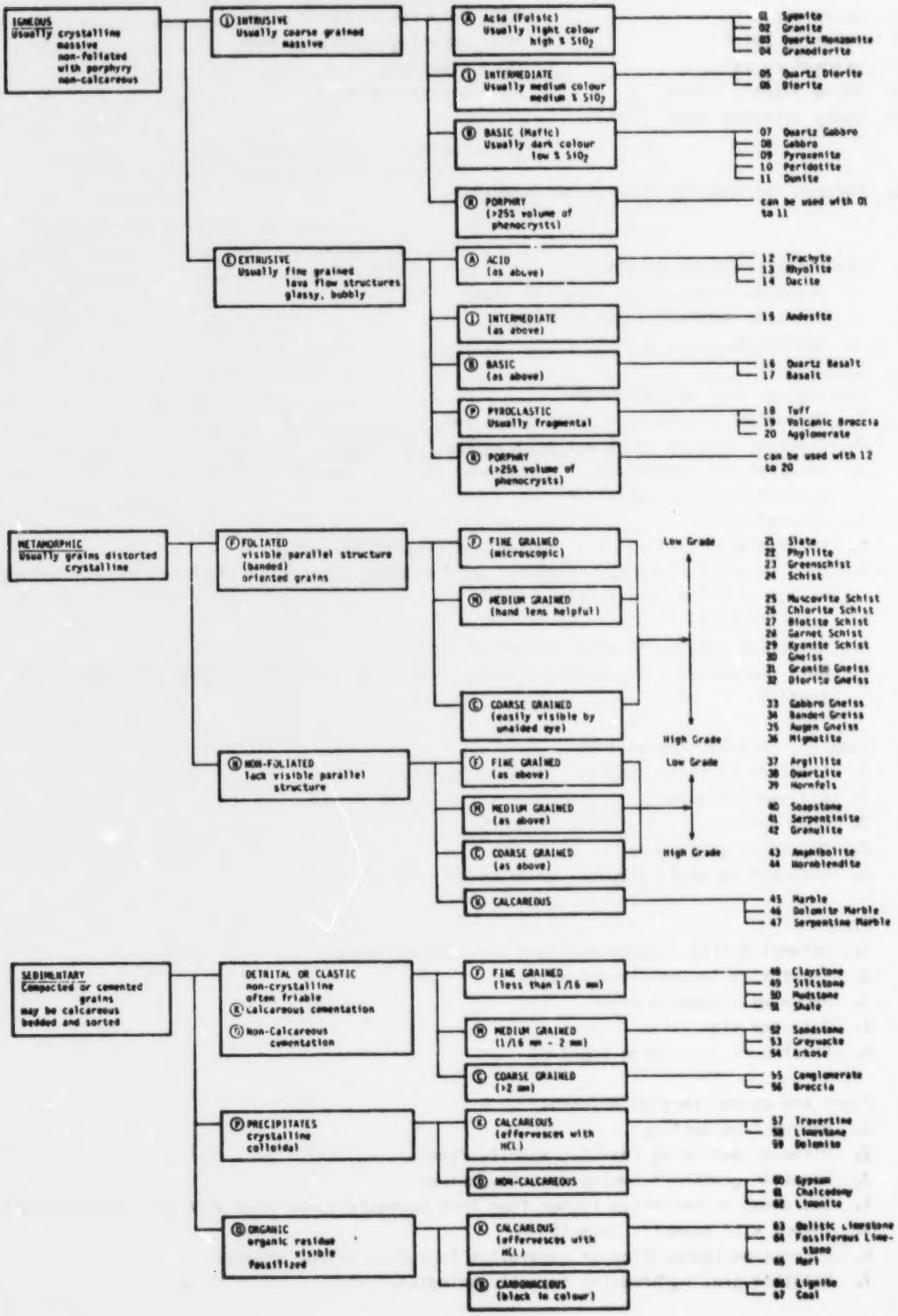
Soil Phase and Variant Symbols

Symbol	Description
A_	Sombric variant.
CØ	Cobbly (>20% cobbles or stones).
DC	Moderately to strongly cemented pan occurring between 100 and 200 cm depths.
G_	Gravelly (20-50% coarse fragments by volume).
ID	Imperfectly drained (wetter). Gleyed subgroups.
L_	Shallow lithic (50-100 cm to bedrock). Fine to medium textures only.
LØ	Loamy texture (10-50 cm of finer textured capping).
MC	Moderately to strongly cemented soil horizons (Duric horizon).
MD	Moderately well to well drained (drier) (ie. O.DYB in a GL.DYB soil map unit).
PD	Poorly drained (Gleysolic).
R_	Rubbly/blocky (>50% rubbly or blocky materials by volume).
S_	Shallow (50-100 cm) capping over another parent material or strongly contrasting texture (ie. >50 cm of $\frac{sWv}{M}$; $\frac{sWv}{gsW}$).
SA	Saline.
SØ	Shallow organic soils (40-160 cm to mineral deposits).
SL	Very shallow lithic (20-50 cm to bedrock).
SP	Sedimentary peats.
T_	Taxajunct - taxonomy change. Specific classification given in soil description.
VG	Very gravelly (>50% coarse fragments by volume).
VS	Very shallow (10-50 cm) capping over another parent material or strongly contrasting texture (i.e. 10-50 cm of $\frac{sWv}{M}$ or $\frac{sWv}{gsW}$).
W_	Strongly mottled phase. Wetter moisture regime in profile as evidenced by prominent mottling with 50 cm of the surface. Seasonal perched water tables present. Not a Gleysolic type landscape.
WC	Weakly cemented soil horizons.

Family Particle Size

Code	Particle Size Class
F	Fragmental
SS	Sandy-Skeletal
LS	Loamy-Skeletal
CS	Clayey-Skeletal
S	Sandy
L	Loamy
CL	Coarse-Loamy
FL	Fine-Loamy
CSI	Coarse-Silty
FSI	Fine-Silty
C	Clayey
FC	Fine-Clayey
VFC	Very Fine-Clayey
CI	Cindery
A	Ashy
T	Thixotropic
AS	Ashy-Skeletal
TS	Thixotropic-Skeletal
G	Grumic

Items 36 & 38: Rock Classification



Item 39: Successional Status - Present Stage

PS	pioneer seral	MC	maturing climax
YS	young seral	MCC	maturing climatic climax
MS	maturing seral	MEC	maturing edaphic climax
OS	overmature seral	DC	disclimax
YEC	young edaphic climax	NV	non-vegetated
YCC	young climatic climax		

Item 40: Factors Influencing Stand Establishment

A. Atmosphere related effects:
   1. Atmospheric pollution (specify type)
   2. Climatic extremes (specify type)
   3. Windthrow

B. Cutting and soil disturbances:
   1. Abandoned construction sites (road bed, railway, etc.)
   2. Clearcut logging (no slash burn unless indicated)
   3. Cultivation (continued disturbance of the vegetation and/or the soil, excluding harvesting of native crop)
   4. Excavation
   5. Harvesting of native crop (haying, salal picking, etc.)
   6. Land clearing (includes grubbing and/or other forms of disturbance of the natural soil as for pipeline construction, etc.)
   7. Scarification
   8. Selective logging (including shelter cut)
   9. Soil compaction (including effects from foot traffic, machinery traffic and animal traffic)

C. Dumping, disposal and spills:
   1. Chemical spill or disposal (specify type)
   2. Effluent disposal
   3. Mine spoils
   4. Oil spill or disposal
   5. Radioactive waste disposal or exposure

D. Fires:
   1. Intensive fire (consuming trees and larger shrubs)
   2. Light fire (primarily ground fire)
   3. Repeated intensive fire
   4. Repeated light fire
   5. Slash burn (following logging)

E. Plant and animal related effects:
   1. Beaver tree cutting
   2. Disease (excluding insects; specify type)
   3. Domestic grazing/browsing (specify animal)
   4. Excrement accumulation (other than that normally associated with grazing or browsing)
   5. Insect kill (specify insect)
   6. Succession (generation of vegetation including climax stands)
   7. Wildlife grazing/browsing (specify animals)

F. Terrain related effects:
   1. Avalanching
   2. Eolian (active deflation or deposition)
   3. Recent deglaciation
   4. Rock quarrying (including open mine pits)
   5. Terrain failures (active or recent slumps, slides, solifluction, etc.)
   6. Volcanic activity

G. Vegetation and site improvement related effects:
   1. Fertilization (specify fertilizer)
   2. Irrigation
   3. Planted to trees or shrubs
   4. Seeded or planted to grass or herbs
   5. Seeded to trees or shrubs

H. Water related effects:
   1. Inundation (including temporary inundation resulting from beaver activity)
   2. Temporary seepage (usually man induced seepage; this excludes intermittent seepages resulting from climate patterns)
   3. Watertable control (diking, damming)
   4. Watertable depression (associated with extensive water extraction from wells)

Z. Miscellaneous:
   1. Other (specify and describe)

Item 42: Humus Form Classification

Must be coded. Descriptors in first two spaces, great group in third and fourth spaces, order in the fifth and sixth space. Codes are as follows:

Mor Descriptors

H	hypno	G	granular
S	sphagno	A	amorpho
L	licheno	M	mycelio
E	ericaceo	R	rhizo
C	conifero		
D	deciduo		

only one of these may be used; only one of these may be used

Classification - Subgroup - Great Group

.MU	mull	.MR	mor
R.MU	rhizomull	F.MR	fibrimor
Z.MU	zoomull	HF.MR	humifibrimor
.MD	moder	FH.MR	fibrihumimor
ML.MD	mull-like moder	H.MR	humimor
T.MD	typical moder	P.MR	peatymor
W.MD	raw moder	HP.MR	humic peatymor
		MP.MR	mesic peatymor
		FP.MR	fibric peatymor
		.AN	anmoor

Variants

CL	clayey	HY	hydric	AC	acid	TK	thick
LO	loamy	ME	mesic	SL	slightly acid	TN	thin
SA	sandy	XE	xeric	NE	neutral		
				CA	calcareous		

only one from each column may be entered.

Item 51: Agency

Provincial agencies:

- Ministry of Environment (ME)
  - Terrestrial Studies Branch - METS
  - Fish and Wildlife Branch - MEFW
- Ministry of Forests (MF)
  - Research Branch - MFRS
  - Range Branch - MFRG
  - Inventory Branch - MFI
- Ministry of Agriculture and Food (MA)
  - Soils Branch - MAS
  - Land Commission - MALC

Federal agencies:

Agriculture Canada (CA)
- Vancouver - CAVA
- Agassiz - CAAG
- Kamloops - CAKA

Environment Canada (CE)
- Lands Directorate - CELD
- Canadian Forestry Service - CEFS

Industry:

e.g. MacMillan Bloedel - IMB
- Pacific Logging - IPL
- B.C. Forest Products - IFP

Consultants:

denote with "X" then initial of company.
e.g. "Arctic Soils LTD." would be "XAS."

APPENDIX B: SOIL CODES

Item 4: Horizon Boundary

Distinctness Codes

N	none	C	clear
D	diffuse	A	abrupt
G	gradual		

Form Codes

S	smooth	I	irregular
W	wavy	B	broken

Item 5: Coarse Fragment Description

Type

R	rounded	A	angular
S	subrounded or subangular	T	thin, flat

Item 6: Soil Texture

Code

S	sand	SI	silt
LS	loamy sand	SICL	silty clay loam
SL	sandy loam	CL	clay loam
L	loam	SIC	silty clay
SCL	sandy clay loam	C	clay
SC	sandy clay	HC	heavy clay
SIL	silt loam		
CS	coarse sand	LCS	loamy coarse sand
MS	medium sand	LMS	loamy medium sand
FS	fine sand	LFS	loamy fine sand
VFS	very fine sand	LVFS	loamy very fine sand
CSL	coarse sandy loam	FSL	fine sandy loam
MSL	medium sandy loam	VFSL	very fine sandy loam

Item 7: Structure

Grade Codes

W	weak	MS	moderate to strong
WM	weak to moderate	S	strong
M	moderate		

Class Codes

VF	very fine	M	medium
VFF	very fine to fine	MC	medium to coarse
F	fine	C	coarse
FM	fine to medium	VC	very coarse

Kind Codes

ABK	angular blocky	PR	prismatic
SBK	subangular blocky	COL	columnar
GR	granular	SGR	single grained
PL	platy	MA	massive
		CDY	cloddy

Kind Modifier Code

PS	pseudo

Item 8: Moisture

Code

D	dry state
M	moist state
W	wet state

Item 9: Consistence

Dry Consistence Codes

1	loose	5	very hard
2	soft	6	extremely hard
3	slightly hard	7	rigid
4	hard		

Moist Consistence Codes

1	loose	4	firm
2	very friable	5	very firm
3	friable	6	extremely firm

Wet Consistence Codes

1	nonsticky	3	sticky
2	slightly sticky	4	very sticky

Plasticity Codes

1	nonplastic	3	plastic
2	slightly plastic	4	very plastic

Item 11: Colour

Aspect Codes

	mineral horizons		organic horizons
1	matrix moist	8	crushed dry
2	matrix dry	9	natural wet/reduced
3	exped moist	10	natural wet/oxidized
4	exped dry	11	pressed wet/reduced
5	imped moist	12	pressed wet/oxidized
6	imped dry	13	rubbed wet/oxidized
7	crushed moist	14	rubbed dry

Item 12: Mottles

Abundance Codes	
X	none
F	few
C	common
M	many

Contrast Codes	
F	faint
D	district
P	prominent

Size Codes	
F	fine
M	medium
C	coarse

Boundary Distinctness	
S	sharp
C	clear
D	diffuse

Item 13 and 16: Roots and Pores

Abundance Codes	
X	none (not applicable to item 16)
V	very few
F	few
P	plentiful
A	abundant

Size Codes	
V	very fine
F	fine
M	medium
C	coarse

Orientation Classes	
V	vertical
H	horizontal
O	oblique
R	random

Distribution	
IN	inped
EX	exped
MX	matrix

Continuity (of Pores)	
CO	continuous
DC	discontinuous

Morphology (of Pores)	
S	simple
D	dendritic
C	closed

Types of Pores	
V	vesicular
I	interstitial
T	tubular

Item 15: pH

Method Code			
1	bromothymol blue	6	pH meter (0.1M $CaCl_2$)
2	cresol red	7	phenol red
3	hellige-truog	8	soiltex
4	lamotte-morgan	9	thymol blue
5	pH meter (1:1 H_2O)	10	phydrion

Item 17: Horizon Porosity

S	slightly porous
M	moderately porous
H	highly porous

Item 18: Clay Films

Frequency Codes

X	none
F	few
C	common
M	many
CS	continuous

Thickness Codes

TH	thin
MTK	moderately thick
TK	thick
VTK	very thick

Location Codes

1	in pores and/or channels only
2	on ped faces
3	in many pores/channels and on some ped faces
4	in all pores/channels and on all ped faces
5	visible bridges between sand grains
6	coatings on sand grains
7	on lower surfaces of coarse fragments
8	on upper surfaces of coarse fragments

Item 19: Effervescence

X	absent
VW	very weak
W	weak
M	moderate
S	strong

Item 20: Secondary Carbonate Description

Continuity Codes

Continuous

1	homogeneous, not banded
2	nonhomogeneous, not banded
3	homogeneous, banded
4	streaked banded

Discontinuous

5	streaked
6	spotted
7	streaked and spotted
8	nodular
9	banded

Abundance Codes

X	absent
F	few
C	common
M	many

Size Codes

F	fine
M	medium
C	coarse

Shape Codes

Streaks

V	vertical
H	horizontal
R	random

Spots

C	rounded
O	oblong
I	irregular

Consistence

	Moist		Dry
1	loose	1	loose
2	very friable	2	soft
3	friable	3	slightly hard
4	firm	4	hard
5	very firm	5	very hard
6	extremely firm	6	extremely hard
		7	rigid

Item 21: Salinity

X	absent
W	weakly saline
M	moderately saline
S	strongly saline

Item 22: Concretions, Nodules and Casts

Kind Code			
1	durinodes	7	pedotubules
2	gypsum	8	worm casts
3	salts	9	insect casts
4	lime	10	others
5	lime silica	11	unspecified
6	oxides		

Abundance Code		Size Code	
X	absent	F	fine
F	few	M	medium
C	common	C	coarse
M	many		

Location		Shape	
1	around root channels	S	spherical
2	local concentrations	O	oblong
3	throughout matrix	I	irregular
		P	plate-like

Item 23: Cementation

Agent Code		Degree Code	
1	humus-aluminum	W	weakly cemented
2	iron	M	moderately cemented
3	lime	S	strongly cemented
4	silica	I	indurated
5	lime and silica		
6	other	Extent Code	
7	unspecified	X	no cementation
		D	discontinuous
		C	continuous

Item 24: Organic Material Description

Kind Code	
1	angiosperm leaves
2	coniferous needles
3	sphagnum moss
4	other mosses
5	sedges, reeds
6	herbaceous fragments
7	coprogenous earth
8	other

Decomposition Code	
N	none
S	slight
M	moderate
H	high

Woody Material Hardness Code	
S	soft
SH	slightly hard
H	hard
VH	very hard

Woody Material Volume Code	
0	none
1	<10% vol.
2	10-20% vol.
3	20-50% vol.
4	>50% vol.

von Post Scale Codes			
1	undecomposed	6	moderately strongly decomposed
2	almost undecomposed	7	strongly decomposed
3	very weakly decomposed	8	very strongly decomposed
4	weakly decomposed	9	almost completely decomposed
5	moderately decomposed	10	completely decomposed

APPENDIX C: VEGETATION CODES

Distribution Codes

1	rare individual, a single occurrence
2	a few sporadically occurring individuals
3	a single patch or clump of a species
4	several sporadically occurring individuals
5	a few patches or clumps of a species
6	several well spaced patches or clumps
7	continuous uniform occurrence of well spaced individuals
8	continuous occurrence of a species with a few gaps in the distribution
9	continuous dense occurrence of a species

Vigor Codes

0	Species Dead
1	Vigor Poor
2	Vigor Fair
3	Vigor Good
4	Vigor Excellent

Phenology Codes

	VEGETATIVE				GENERATIVE
	Deciduous Tree or Shrub		Conifer		
0	Closed bud	0	Closed bud	0	Without blossom buds
1	Buds with green tips	1	Swollen bud	1	Blossom buds recognizable
2	Green leaf out but folded	2	Split bud	2	Blossom buds strongly swollen
3	Leaf unfolding up to 25%	3	Shoot capped	3	Shortly before flowering
4	Leaf unfolding up to 50%	4	Shoot elongate	4	Beginning flowering
5	Leaf unfolding up to 75%	5	Shoot full length, lighter green	5	In bloom up to 25%
6	Full leaf unfolding			6	In bloom up to 50%
7	First leaves turned yellow	6	Shoot mature, equally green	7	Full bloom
8	Leaf yellowing up to 50%			8	Fading
9	Leaf yellowing over 50%			9	Completely faded
10	Bare			10	Bearing fruit
				11	Dispersal of seed

	Herbs		
0	Without shoots above ground	0	Without blossom buds
1	Shoots without unfolded leaves	1	Blossom buds recognizable
2	First leaf unfolds	2	Blossom buds strongly swollen
3	2 to 3 leaves unfolded	3	Shortly before flowering
4	Several leaves unfolded	4	Beginning bloom
5	Almost all leaves unfolded	5	Up to 25% in blossom
6	Plant fully developed	6	Up to 50% in blossom
7	Stem and/or first leaves fading	7	Full bloom
8	Yellowing up to 50%	8	Fading
9	Yellowing over 50%	9	Completely
10	Dead	10	Yielding fruit
		11	Dispersal of seed

Phenology Codes (Cont'd)

	VEGETATIVE	GENERATIVE
	Grasses	
0	Without shoots above ground	Without recognizable inflorescence
1	Shoots without unfolded leaves	Inflorescence recognizable, closed
2	First leaf unfolded	Inflorescence partly visible
3	2-3 leaves unfolded	Inflorescence fully visible, not unfolded
4	Beginning development of blades of grass	Inflorescence unfolded
5	Blades partly formed	First blooms pollenizing
6	Plants fully developed	Up to 50% pollenized
7	Blades and/or first leaves turning yellow	Full bloom
8	Yellowing up to 50%	Fading
9	Yellowing over 50%	Fully faded
10	Dead	Bearing fruit
11		Dispersal of seed
	Ferns	
0	Without shoots above ground	Sori absent
1	Rolled fronds above ground	Sori green, forming
2	First frond unfolds	Sori mature, darker, drier
3	2 to 3 fronds unfolded	Sori depressing, strobili forming in lycopodium
4	Several fronds unfolded	
5	Almost all fronds unfolded	
6	Plant fully developed	
7	First fronds fading	
8	Yellowing up to 50%	
9	Yellowing over 50%	
10	Dead	

Form Utilization Class

1	All available, little or no hedging
2	All available, moderately hedged
3	All available, severely hedged
4	Partly available, little or no hedging
5	Partly available, moderately hedged
6	Partly available, severely hedged
7	Unavailable
8	Dead

Utilization Rating

0	No utilization (0%)
1	Trace (1-5%)
2	Light (6-25%)
3	Moderate (26-50%)
4	Heavy (>50%)

Percent Utilization

0	0%
1	1-15%
2	16-25%
3	26-35%
4	36-45%
5	46-55%
6	56-65%
7	66-75%
8	76-85%
9	86-100%